Clitics and parametrization

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Clitics and Parametrization

Case Studies in the Interaction of Head Movement Phenomena

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PROEFSCHRIFT

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Jacobus Maria Wilhelmus Haverkort

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Promotor: Prof.Dr. H.C. van Riemsdijk

Contents

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Chapter 1

Clitics and the Head Movement Constraint

1.1 Some basic issues in the syntax of heads and their interconnections

In the past decade, the syntax-morphology interface has received a lot of attention in the literature. In mainstream research within the principles and parameters framework of generative linguistics, inflectional morphology has been taken to be part of syntax in recent years; a whole range of positions can be distinguished, the strongest of which is no doubt Lieber (1992), who sketches a model that does not make any distinction between syntax and morphology and assumes that the same principles and constraints are active in both word and sentence formation; most researchers take a less strong stand, and conjecture that morphology-specific rules and primitives must still be assumed (cf. Di Sciullo & Williams 1987). Another assumption in recent research is that morphology is no longer inherently connected to any one level of representation; general principles, not particular to syntax or morphology, form complex morphological constructs both in the lexicon and in syntax. A general consequence of this development is that a close

connection between syntax and morphology is assumed, which takes the form of an isomorphic relation, whereby the syntactic structure constrains morphological overgeneration in syntax, as expressed in the Mirror Principle (Baker 1985: 375):

(1) **Mirror Principle (MP)**

Morphological derivations must directly reflect syntactic derivations (and vice versa).

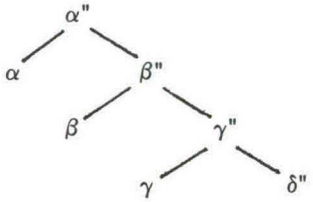
The following sentences from Quechua (Muysken 1981), which are both licit, illustrate this isomorphism: the order of the causative and reciprocal morpheme determines the semantics of the verbal complex; these orders can in turn be related to a difference in morphosyntactic derivation, which in turn is dependent on distinct d-structure representations, with the causative morpheme c-commanding the reciprocal morpheme, or vice versa.

(2) a. Maqa-naku-ya-chi-n
beat-RECIP-DUR-CAUS-3S
'He$_j$ is causing them$_i$ to beat each other$_i$'

b. Maqa-chi-naku-rka-n
beat-CAUS-RECIP-PL-3S
'They$_i$ let someone$_j$ beat each other$_i$'

A prerequisite for the Mirror Principle to be a correct generalization, is that a moved head is prevented from skipping an intermediate head position; otherwise, no predictions about the underlying order could be made on the basis of morphological structure, due to the fact that an intervening head could be skipped by a head it c-commands, before it attaches itself to the directly c-commanding head. In the following structure that would mean that γ attaches to α before β attaches to α, giving rise to the string α-γ-β:

(3)



The constraint that prevents this from happening is the Head Movement Constraint, which can be formulated as follows (Chomsky 1986: 71):

(4) **Head Movement Constraint (HMC)**

Movement of a zero-level category β is restricted to the position of a head α that governs the maximal projection γ of β, where α θ-governs or L-marks γ, if $\alpha \neq C$.

This condition restricts head movement to a target position that has the maximal projection of its source position as its complement.[1] This explains why head movement out of subjects and adjuncts is impossible, as the following examples from Mohawk illustrate:

(5) a. Yao-wir-a?a ye-nuhwe?-s ne ka-nuhs-a?
PRE-baby-SUF 3FS/3N-like-ASP the PRE-house-SUF
'The baby likes the house'

b. Yao-wir-a?a ye-nuhs-nuhwe?-s
PRE-baby-SUF 3FS/3N-house-like-ASP
'The baby house-likes'

c. * Ye-wir-nuhwe?-s ne ka-nuhs-a?
3FN/3N-baby-like-ASP the PRE-house-SUF
'Baby-likes the house'

The HMC is not only closely interconnected with the MP, but also with the ECP, which requires traces to be governed both by a lexical, theta-assigning head and by a coindexed

antecedent.[2] In case of head movement, the ECP reduces to antecedent government: the c-commanding head assigns a theta-role to its complement, but this role does not percolate down to the latter's head (cf. Baker 1988: 54);[3] this is a more general property of theta-assignment: it only happens to maximal projections. Under standard assumptions about *domination* (May 1985, Chomsky 1986), the higher segment of a complex category created by head movement will not create a boundary for c-command by the incorporated element.

The effects of the HMC and the ECP do not completely overlap, though: the HMC is more restrictive than the ECP. This can be easily illustrated. Consider the abstract tree representation in (3) above. Movement of a head γ out of its maximal projection γ" that is a blocking category is by definition barred (cf. the illicit cases of incorporation from subjects and adjuncts), unless the most directly c-commanding head β assigns a thematic role to its complement, so that lexicalization of this element allows it to L-mark γ", thereby voiding barrierhood. In these cases, HMC and ECP make the same predictions.[4] γ cannot skip the non-lexical theta-assigner β, either by stipulation of the HMC, or because β's complement would remain opaque, thereby inducing an ECP violation.

The predictions of HMC and ECP diverge somewhat in cases where a head moves out of a maximal projection γ" that is not a barrier: the HMC predicts that in that case γ can only move one head position up, to β, whereas the ECP predicts that it can move up an in principle unlimited number of head positions, as long as it does not cross any barriers, thus allowing for antecedent government to license the trace; this means that in the tree above, γ could move up to α in one swoop, as long as β" and γ" do not constitute barriers. This means that the HMC can partly, but not completely, be reduced to the ECP. Notice that for this reasoning to hold, it must be insured that the intervening head does not create a minimality barrier; under the assumption of Rizzi's (1990) Relativized Minimality, this situation is not expected to arise: the intervening head is not coindexed

with the trace by definition, nor is it in any other relevant sense of a similar type, so that it is not a potential closer antecedent governor for the trace of the moved head.[5]

It is not a priori clear why head movement should be more heavily restricted in scope than other types of movement, where the ECP suffices (Lasnik & Saito 1984). The HMC was first proposed in a discussion of verb movement in Germanic (Travis 1984) and incorporation phenomena that involve bound morphemes (Baker 1985, 1988). The strictly local character of head movement can be considered an artifact of the morphological processes under consideration. This is uncontroversial in the case of merger of verb and inflectional morphology; the fact that the phonological form of the incorporated element differs from the unbound morpheme that it corresponds to is indicative that a similar situation can be taken to hold in cases of incorporation discussed by Baker. This is illustrated in the following example of Chichewa P-incorporation.

(6) a. Fisi a-na-dul-a chingwe **ndi** mpeni
hyena SP-PAST-cut-ASP rope with knife
'The hyena cut the rope with a knife'

b. Fisi a-na-dul-**ir**-a mpeni chingwe
hyena SP-PAST-cut-with-ASP knife rope
'The hyena cut the rope with a knife'

The same phenomenon can be observed in all instances of P-incorporation that Baker discusses in non-IE languages: the form of the affix is distinct from that of the full preposition.[6] As soon as head movement phenomena that involve morphemes that are less bound in nature are taken into consideration, the picture changes radically. In the remainder of this chapter, it will be argued that clitic movement is an instance of head movement, that nonetheless does not obey the strict locality conditions imposed by the HMC.

Travis (1988: 300) analyzes incorporation as a two-step process: (a) syntactic movement,

and (b) morphological incorporation. In view of this distinction, the apparent locality of head movement can be determined by factors underlying either of these processes. In line with the above remarks, the syntactic movement can be constrained in terms of the ECP, like other instances of syntactic movement, and the stricter locality condition (descriptively captured by the HMC) can be considered as a direct consequence of morphology: selectional restrictions of affixes need to be satisfied by the appropriate head.[7] Alternatively, locality of head movement may be forced by government restrictions: only local steps allow a head to escape a successive series of barriers. Some instances of head movement will only undergo the first, syntactic stage of the process (depending on its morphological requirements), and will therefore exhibit a greater freedom than others, that additionally undergo morphological merger.

1.2 Basic clause structure in Romance

The contrast between English and French with respect to the surface position of the verb in tensed clauses in relation to negation and adverbs has traditionally been explained in terms of the contrast between affix lowering and verb raising, respectively (Emonds 1978, 1985). This allowed for a uniform d-structure representation for both languages.

(7) a. Jean embrasse souvent Marie
Jean kisses often Marie
b. Jean n'embrasse pas Marie
Jean NEG kisses not Marie

(8) a. John often kisses Mary
b. John does not kiss Mary

These facts can be accounted for under a generalized version of X-bar theory, in which INFL is the head of the clause, and either the verb moves up to INFL,[8] or INFL moves

down to the verb. As soon as infinitival clauses are taken into consideration, though, it turns out that this structure is not elaborate enough.

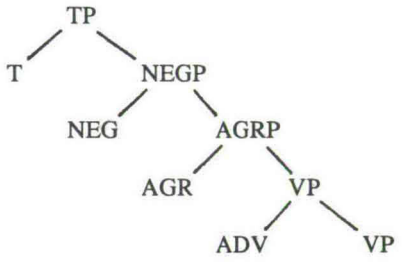
Pollock (1989) argues for a more elaborate clause structure, whereby both features of INFL, tense and agreement, project independently in syntax. He bases this proposal on the observation that there must be multiple landing sites for verb movement in French, in view of sentences like the following:

(9) a. A peine comprendre l'italien dénote un manque ...
hardly to understand Italian denotes a lack
b. Comprendre à peine l'italien dénote un manque ...

(10) a. Ne pas comprendre l'italien dénote un manque ...
NEG not to understand Italian denotes a lack
b. * Ne comprendre pas l'italien dénote un manque ...
NEG to understand not Italian denotes a lack

Whereas the first pair of sentences can still be explained in terms of optional V-raising, this account gets into trouble when these sentences are compared with those of the second pair: if V were able to raise over the adverb, it should be able to raise over the negation as well, under the hypothesis that there is only one functional head for V to raise to. Apparently, negation and adverbials are occupying distinct positions; the verb can optionally raise over the adverb, but not higher, into the position preceding the negation. Pollock suggests the following hierarchical structure of the relevant elements:

(11)



The difference between tensed and infinitival clauses can now be explained in terms of the distance over which the verb raises: in finite clauses, the verb raises all the way to T, passing through AGR, in order to obey the HMC; in infinitival clauses, the verb can optionally raise to AGR, preceding the adverb, but no higher. The distance over which the verb can and must raise is determined by features of the functional heads that act as hosts.[9]

The relevant feature is opacity of some sort, which allows transmission of thematic properties of the raised verb to its trace, under the general assumption that the foot of a chain is the only element that retains the ability to assign thematic roles and case. That this is the relevant property can be shown by looking at verbs that do not assign any thematic roles, like the auxiliaries *avoir* (to have) and *être* (to be); it is predicted that these verbs should not be constrained to the position following the negation in infinitival clauses, and this is indeed what can be observed.

(12) a. Ne pas être heureux est une condition pour écrire des romans
NEG not to be happy is a prerequisite for writing novels
b. N'être pas heureux est une condition pour écrire des romans

There are a number of observations, though, that suggest that the hierarchical positions of AGR and T be reversed. One argument for this change comes from the morphology

of a number of synthetic tenses in French and Italian, exemplified by the following verbs:

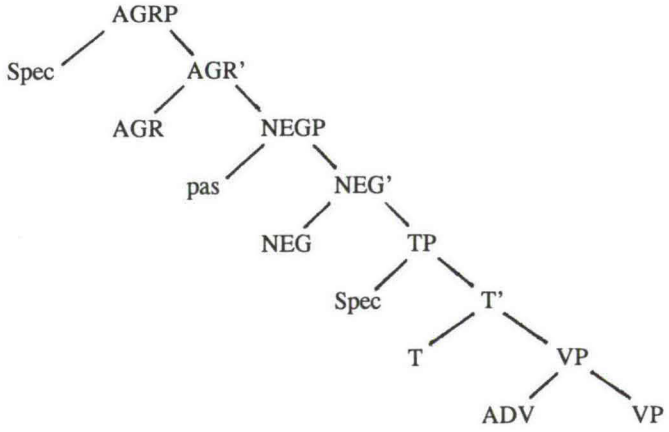
(13) a. parl-er-ai
speak-FUT-1S

b. parl-er-ó
speak-FUT-1S

(14) a. legg-eva-no
read-IMP-3P

The order of the tense and agreement affixes indicates that the former must have merged with the verb prior to merger of this complex with the latter, infixation not being a general process in Romance. This also makes sense for other reasons: as argued by Koopman (1984), agreement features are relevant for nominative case assignment, as well as for licensing of a null subject (cf. Rizzi 1986).[10] Since these processes take place under government, the heads involved must be close enough to the surface subject position, and may not be shielded off by a closer governor that creates a minimality barrier. On the basis of these considerations, the structure can be adapted in the following fashion, while retaining Pollock's main insights.

(15)



On the basis of similar distributional considerations, Belletti (1991) has extended this more complex structure to participles and other non-finite verb forms which are selected by an auxiliary in periphrastic tenses. She assumes that the functional structure associated with these elements is as follows:

(16) $[_{AGRP}$ Spec $[_{AGR'}$ AGR $[_{ASPP}$ Spec $[_{ASP'}$ ASP $[_{VP}$ V ...

A relevant set of facts in this context involves past participle agreement in Romance. The basic facts can be summarized as follows: the past participle agrees with the subject when it is unaccusative or with the direct object clitic when it is transitive; in other cases, no agreement takes place. The facts are illustrated in the following sentences:[11]

(17) a. Luisa è uscit-a
Luisa is left-AGR
b. Gianni la ha apert-a
Gianni it-F has opened-AGR
c. Luisa ha apert-o la porta
Luisa has opened-AGR the door-F
d. Luisa ha dormit-o
Luisa has slept-AGR

In (a)-(b), the participle agrees with the feminine subject and object clitic, respectively; in (c)-(d), it bears the unmarked masculine singular ending *-o*. As these examples indicate, the aspectual participial affix always precedes the agreement affix, thus indicating that its base position is hierarchically lower, in accordance with the above structure.

It has been suggested in recent research that the subject starts out in a VP-internal position, in the government domain of its theta-assigner, the verb (Kitagawa 1986, Koopman & Sportiche 1988, Sportiche 1988, Contreras 1992, among others).[12] One

nice consequence of this assumption for Romance is that it allows a very elegant explanation of the positions in which so-called floating quantifiers can occur: these elements can stay behind in the d-structure position of the subject, while the latter raises to its surface position, but they cannot occur in any other position.[13]

(18) a. * Les enfants tous ont vu ce film
the children all have seen that film
b. Les enfants ont tous vu ce film
c. * Les enfants ont vu tous ce film
d. Tous les enfants ont vu ce film

As indicated by (d), the quantifier can also raise along with the subject NP. The subject is forced to raise to the specifier of AGR at s-structure in order to receive nominative case; otherwise, V, being a closer governor, will create a minimality barrier for AGR and the subject NP will violate the Case Filter.

The VP-internal subject hypothesis solves a formal problem with respect to subject clitics: these clitics would have to move downward in traditional phrase structure configurations, thus violating binding conditions (and necessitating LF-raising). Under the analysis adopted here, subject cliticization involves upward movement, on a par with other types of cliticization.[14]

1.3 Movement versus base-generation of clitics

The analyses of cliticization in the literature globally fall into two groups: (a) those that assume movement of the clitic from its argumental base position into its surface position, leaving a trace that is subject to locality requirements (Kayne 1975, 1989), and (b) those that assume base-generation of the clitic in its surface position, where it can license and

identify a pronominal argument position (Jaeggli 1982, Borer 1984, Roberge 1988, 1990).[15] Schematically, these two types can be represented as follows, respectively:

(19) a. ... clitic$_i$ + V ... t_i ...
b. ... clitic$_i$ + V ... [+pron]$_i$ ...[16]

The non-local character of cliticization has been brought forward from the earliest studies on as an argument in favor of a movement analysis; in these older studies, the non-local attachment of the clitic would force completely unmotivated extensions of selectional restrictions of both heads that select the argument that the clitic is associated with and those of the head it attaches to. Consider the following examples:

(20) a. Jean nous est fidèle
Jean us is faithful
b. Jean nous a été fidèle
Jean us has been faithful
c. Jean le fait manger
Jean him makes eat

In these sentences the clitic does not attach to the element that selects it, namely the adjective (a-b) or main verb (c); instead, it attaches to the highest, finite verb, either in the same clause, or one clause higher up. In some languages, this non-local behavior is not constrained to one clause, as the following example from Spanish shows, where one of the clitics (*lo*) has attached two clauses higher up than the one headed by the verb that selects it, whereas the other has crossed just one clause boundary.[17]

(21) Te lo quiero permitir hacer
you it want-1S allow do

The non-local dependency observed is problematic in terms of selection, which is by

definition constrained in terms of the maximal projection dominating the selecting head. The development of base-generated, pronominal empty categories partly voided this argument in favor of movement; the pronominal element fulfills the selectional restrictions of its theta assigner, and is in turn identified and licensed by the clitic.[18] It should be noticed, though, that the identification of features on the empty pronominal is a strictly local process, that takes place under government by some identifying category (McCloskey 1986). This function can partly be fulfilled by the verb, but the clitic must play a role in the identification process, too, especially in view of the fact that it cannot be left out; moreover, empty pronominals are not normally licensed in many languages that do have clitics (like French), once again pointing in the direction of a close relationship between the two (cf. also Roberge (1990) for subject clitics).

Another observation that has been brought to bear on the issue is the complementary distribution between clitic and full NP in argument position.

(22) a. Christina lit le livre
Christina reads the book
b. Christina le lit
Christina it reads
c. * Christina le lit le livre
Christina it reads the book[19]

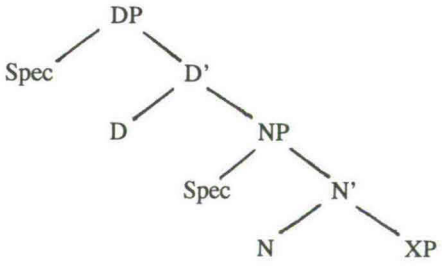
Under a movement analysis, this fact is easily explained: since the clitic moves from the complement position prior to s-structure, nothing can occur in its vacated position at s-structure. This argument in favor of a movement analysis of cliticization can be turned around, though. In some Romance languages, like Rumanian and a number of varieties of Spanish, there is no strict complementarity. The following examples of so-called clitic doubling from River Plate Spanish and Rumanian illustrate this fact.

(23) a. Lo vimos a el
him see-1P to him
b. l-am vàzut pe bàiat
him-have-1P seen to the boy

In these examples a pronominal clitic and a stressed pronoun or full NP co-occur; under the same logic, this would indicate that no movement has taken place, since otherwise the complement position would be empty at s-structure. The NP in complement position is in need of a dummy preposition in order to receive case, though, indicating that it is not a regular complement; it is generally assumed that the clitic has absorbed the relevant case features of the verb.

An elaboration of the structure of NP (Abney 1987) has recently provided a solution for this problem. Taking up some older ideas of Brame, according to which pronominal elements are determiners, and not nouns, Torrego (p.c.) argues that the clitic originates from the D-position, from where it raises via regular head movement, leaving its NP-complement behind.[20]

(24)



An obvious objection against such an analysis is that the doubled element can contain a determiner. This does not provide very strong evidence against such an analysis, though, in view of two facts that are probably related. First, as has been observed by Stowell (1991), among others, NPs can contain determiner elements of their own, independent

of any D-projection. Second, as has been observed by Roberge (1988, 1990), not just any type of determiner can occur in the doubled element: many languages seem to exhibit some sort of specificity effect, allowing only a subset of determiners in the doubled element, as the following contrast from Rumanian illustrates:

(25) a. L'am văzut pe Popescu
him (I) have seen OM Popescu
b. * L'am văzut pe un bucătar
him (I) have seen a cook

A more detailed discussion of clitic doubling lies outside the scope of this study; the reader is referred to the above mentioned studies.[21]

The traditional arguments do not allow a decision to be made between movement versus base-generation. The recent elaboration of phrase structure, whereby the verb picks up its inflectional endings in syntax, provides a strong argument in favor of a movement analysis and against base-generation. If the clitic is base-generated on the verb, it moves along with the verb when the latter picks up its inflectional endings, and consequently it would end up in a hierarchical position c-commanded by inflection. In most instances of cliticization in Romance, this prediction cannot be tested, because the clitic and inflectional morphology end up on different sides of the verb. In some construction types, however, they do show up on the same side of the verb: with infinitivals in Italian and Spanish, and with positive imperatives in French, for instance, as illustrated in the following examples:

(26) a. Gianni vuole veder-li
Gianni wants to see-them
b. Me permitieron educar-la
me permit-3P to educate-her
c. Donnez-le-moi!
give-it-me

Contrary to what base-generation would predict, the clitic is not internal to inflectional morphology, i.e. it is not in a hierarchically lower position than the inflection, as a sister of the verb. Thus, these cases argue in favor of a structure like (b) and against one like (a):[22]

(27) a. [[clitic + verb] inflection]
b. [clitic [verb + inflection]]

Base-generation would force infixation in the above cited cases, since the inflection would have to split the verb-clitic complex, a completely unmotivated move for Romance: infixation type processes are very rare in this group of languages.[23] Alternatively, one could assume that the clitic is base-generated on one of the functional heads, i.e. agreement or tense; in that case, the same problem that was discussed above, the non-local attachment of the clitic with respect to its selecting head, shows up again. More importantly, the clitic would have to attach on the right of agreement/tense, whereas it normally left-adjoins in Romance (cf. Kayne 1990, 1991a).

This reasoning holds independently of whether one assumes Kayne's (1991a) interesting hypothesis that instances of encliticization in Romance involve movement of the verb to a position preceding the surface position of the clitic. A crucial assumption in that case is that one accepts the prohibition against excorporation: the verb must not be allowed to leave the clitic-inflection complex.[24] Under the hypothesis that only the head of a complex category can excorporate, this result is obtained, because a functional head

performs that function.

(28) ... V ... CL + I ... [$_{VP}$ [$_{V}$ *e*] ...] ...

Assuming that the clitic is an inflectional category itself leads to similar disadvantages: the functional head associated with the clitic would then have to be hierarchically higher than AGR, in order to get out the ordering facts. This goes counter to a cross-linguistic generalization that object agreement occurs closer to the verb than both subject agreement and tense morphology in the linear string,[25] i.e. it is picked up earlier in the derivation than the latter two; hence, its projection should be in a hierarchically lower position (Baker 1985). The following examples from the Imithupi dialect of Makua illustrate the standard pattern (Stucky 1985, Bresnan & Mchombo 1986).

(29) a. Aráárima á-hó-n-líh-a mwaáná
Araarima SM-T/A-OM-feed-T/A child
b. * Aráárima á-hó-líh-a mwaáná
Araarima SM-T/A-feed-T/A child

Notice, that in languages of this type, the occurrence of the object marker is obligatory, even if an overt object is present, as illustrated by the illicit (b)-example. Moreover, in true object agreement languages, like Makua, the object takes the form of a bare NP, and no dummy preposition needs to be inserted, unlike in the Romance languages that allow clitic doubling.[26]

Clitic doubling is also problematic from the point of view of base-generation: the case features of the verb are assumed to be absorbed by the clitic; notice that only the foot of a chain retains the possibility to assign case and theta roles. This implies that the clitic must have been present on the verb at d-structure, in order to receive the case features, and cannot have been attached to a functional head at that level of representation. Once

again, the linear order problem comes up: the clitic is not internal to inflectional morphology, as predicted. In case of movement of the clitic in syntax, no such ordering problems need arise: the verb can pick up its inflection prior to cliticization.

The above considerations suggest that a movement analysis of cliticization should be preferred over a base-generation analysis under current assumptions.[27] Base-generation of clitics on the verb or as an independent object inflection leads to ordering problems of the clitics with respect to (subject) agreement and tense morphology in the linear string at s-structure.

1.4 Cliticization as an instance of head movement

A number of considerations have been brought forward in the literature to the effect that clitics are heads in terms of X-bar theory, and consequently clitic movement is head movement (Baker 1988, Kayne 1989).[28] Some of the reasoning hinges on apparent constraints imposed on clitic movement by the Head Movement Constraint, such as those brought forward by Kayne (1989): clitics cannot move over an intervening head position in the form of negation or a complementizer.

(30) a. * Gianni li vuole non vedere
Gianni them wants not to see
b. * Gianni li vuole che Maria vede
Gianni them wants that Maria see-SUBJ

It can be shown on the basis of facts similar to those set out in the previous section, that this reasoning does not hold. As was argued there, the clitic ends up in a position which is external to the verb-inflection complex. As the following examples indicate, however, the clitic ends up internal to negation; consequently, the verb, being itself internal to the

clitic, must have picked up its inflection before the negation attaches to it. Via this indirect reasoning it can be shown that the verb must have moved over negation prior to merger of negation with the verb. The (b)-example is even more clear: here the d-structure position of negation in indicated by the negative adverb *mai*.

(31) a. Gianni non li vuole vedere
Gianni not them wants to see
b. Gianni non la diceva mai
Gianni NEG it told ever

Moreover, as Kayne himself notes in a footnote, there are apparent exceptions to his generalization; in some cases, the clitic can move over an overt complementizer, as in the following cases from Italian and Spanish; Kayne (p.c.) argues that these examples only involve apparent complementizers.

(32) a. Lo finisco di fare
it finish-1S COMP to do
b. Lo tengo que hacer
it have-1S COMP to do

But the argument can be turned around: the behavior of clitics is not the behavior one would expect of a typical maximal projection (cf. also Pijnenburg 1991). This would mean that they either substitute for or adjoin to maximal projections. Thus, clitics in Romance would be expected to exhibit behavior similar to instances of wh-movement or NP-movement, counter to fact.[29] The only positions open to clitics as a landing site do not belong to these sets, however. Consider a simple example from French:

(33) Christina le lit
Christina it reads

Under the split INFL hypothesis, discussed above, this sentence would have the following d-structure:

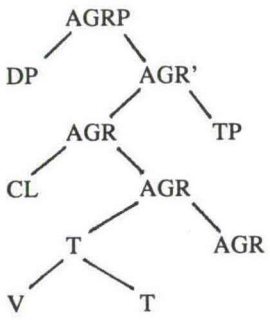
(34) $[_{AGRP}$ Spec $[_{AGR'}$ AGR $[_{TP}$ Spec $[_{T'}$ T $[_{VP}$ Christina lit le ...

The verb moves to T, and subsequently, the V+T complex moves along to AGR; the subject raises to the specifier of AGR, in order to receive nominative case. The clitic in turn ends up in a position immediately to the left of the verb, contrary to its NP-correlates, which appear to the right of the verb. No lexical material may intervene between the clitic and the verbal complex.

(35) a. * Christina le souvent lit
Christina it often reads
b. * Christina le ne lit pas
Christina it NEG reads not[30]

There is no position available between the specifier of AGRP and AGR, i.e. between the subject and the finite verb, that can host a maximal projection argument; nor is there a possibility for adjunction, under a strict version of X-bar theory, which holds at all levels of representation and constrains adjunction of a category X^n to categories with a bar-level *n* (cf. also Abney's (1987) analysis of adjectives and quantifiers on a par with that of determiners: all these elements take maximal projection complements).[31] Thus, a non-maximal projection analysis for cliticization is forced on distributional grounds: only a head position is available for left-adjunction, viz. AGR.[32]

(36)



There is some independent evidence for this structure: in a number of contexts, the verb can move further than AGR in Romance, so-called V-to-C or residual verb second (cf. Rizzi 1991); in constituent questions, the clitic moves along with the verb, a fact that can be explained at no extra cost under the above conjecture, since the clitic and the verb are dominated by the same head, AGR. Under the alternative conjecture, where clitics are maximal projections, some independent explanation needs to be invoked.

(37) a. Pourquoi m'avez-vous choisi?
why me have you chosen
b. Quand l'a-t-il lu?
when it has he read

In the barriers framework, this result can neatly be obtained: V-movement to T enables T to L-mark VP, thus voiding the latter's barrierhood; subsequent movement to AGR has a similar effect on TP. This in turn allows the clitic to move out of VP and TP without adjoining to them, an option that is only available to maximal projections under a strong version of X-bar theory. This way, the clitic ends up external to inflectional morphology by definition.

1.5 Inadequacies of the Head Movement Constraint

In the previous sections it has been established that cliticization in Romance is an instance of head movement. This type of movement is generally assumed to be constrained in terms of the Head Movement Constraint (Travis 1984, Baker 1988), but there are some considerations which indicate that this constraint does not hold for clitic movement. As was already mentioned in the preceding section, the arguments that Kayne (1989) brought forward for the head status of Romance clitics, viz. that they cannot skip a head position while moving upward, do not hold when the facts are closely inspected: overt complementizers and negation do not block movement of the clitic under all circumstances:

(38) a. * Gianni li vuole non vedere
Gianni them wants not to see
b. Gianni non la diceva mai
Gianni NEG it told never

(39) a. * Gianni li vuole che (Maria) vede
Gianni them wants that Maria see-SUBJ
b. Lo finisco di fare
it finished-1S COMP to do

To take the example of the negation: in the first example, negation seems to block the clitic from moving out of the embedded clause, into the matrix clause; in the second example, the clitic (and the verb) must have moved past the negation prior to merger of the latter with the clitic-verb complex (the d-structure position of negation is indicated by the negative adverb, cf. Pollock (1989)), because, as was argued in the preceding section, the clitic is external to the verbal inflection when both appear on the same side of the verb, and the negation in turn is external to the clitic. This suggests that clitics, although heads in terms of X-bar theory, are not sensitive to similar locality constraints

as those that seem to hold for verbs.

There are also other instances of clitic movement in Romance that seem to violate the HMC. First, in all languages of this family, clitics attach to the finite verb in periphrastic tenses like the perfect, i.e. they skip the participle that selects and subcategorizes them, as the following example indicates:

(40) a. Christina l'a lu
Christina it has read
b. * Christina a le lu
Christina has it read

Other overt heads similarly do not create a barrier for clitic movement. Consider the following cases, involving quantitative *en/ne*-cliticization, which leaves behind a quantifier by definition. Under the generalized X-bar theory that Abney (1987) proposes, these elements behave like determiners, in that they subcategorize for a maximal projection (NP or DP). Consequently, the clitic must have moved past the quantifier, without attaching to it.[33]

(41) a. Christina en lit deux
Christina thereof reads two
b. Christina en a lu deux
Christina thereof has read two

(42) Gianni ne trascorrerà tre a Milano
Gianni thereof will spend three in Milano

Adjectives can be stranded in a similar fashion, and as the following cases indicate, additional auxiliaries and degree elements, which are themselves heads in terms of X-bar theory (Abney 1987), can be skipped by the clitic.

(43) a. Gianni è molto fiero della sua idea
Gianni is very proud of his idea
b. Gianni ne è molto fiero
Gianni thereof is very proud
c. Gianni ne è stato molto fiero
Gianni thereof is been very proud

(44) a. Jean restera très fidèle à ses parents
Jean will remain very faithful to his parents
b. Jean leur restera très fidèle
Jean them will remain very faithful
c. Jean leur est resté très fidèle
Jean them is remained very faithful

These examples convincingly indicate that the HMC is too strong a constraint for clitics. For independent reasons, clitics cannot occur with nouns (they would not receive case, and be ruled out by the Case Filter), nor with prepostions, so that the HMC cannot be tested in those contexts; only strong pronouns can occur with prepositions, which in most dialects of French cannot be stranded anyway (Kayne 1975; see however Zribi-Hertz 1984).

The non-local relation involved in clitic climbing constructions also argues against the validity of the HMC for clitics; in these contexts, the clitic escapes an embedded infinitival clause, attaching to the finite verb of a higher clause, skipping at least the lower non-finite verb.

(45) a. Odile lui fait écrire une lettre à Paul
Odile him makes write a letter to Paul
b. Gianni li vuole vedere
Gianni them wants to see

Other instances of violations of the HMC that nonetheless yield a well-formed outcome have been discussed in the literature. Lema & Rivero (1989, 1990) observe that a number

of main verbs in Balkan languages and older stages of Romance can move over a c-commanding auxiliary in root clauses; the following examples are taken from Rumanian and Bulgarian:

(46) a. Spune mi va
tell me will-3S
b. Procel sum knigata
read have-1S book-DEF

The (b)-case is especially crucial, since it shows that only the verb has moved, leaving behind its complement. Moreover, whereas VP-movement, which is independently available in these languages, can move over negation, this type of long distance head movement cannot.[34]

(47) a. Citi cartea nu am putut
read book-DEF NEG have-1S can
b. * Spune nu mi va
tell NEG me will-3S

These instances of head movement are limited to root contexts, which suggests that V-to-C is involved, as in Germanic. If the verb is prevented from moving to C, for instance by an intervening negation, it either remains in situ (Bulgarian, Rumanian), or it incorporates in the auxiliary, forming a synthetic tense (Old Spanish).

Lema & Rivero sketch two ways for the trace of the verb to satisfy the ECP in cases of long head movement: (a) tense marking of the verb by the auxiliary, resulting in coindexation, so that an extended chain of head positions can be formed; (b) LF-incorporation of the auxiliary in the raised verb, again resulting in an extended chain. Both accounts may explain the relevant facts and both follow from the general requirement that the tense operator bind a variable at LF (cf. Pollock 1989). Neither of

these solutions is available, though, to account for the possible HMC violations induced by long clitic movement. It is not made explicit how these options can be parametrized, so as to avoid long head movement in modern Romance. Moreover, barrierhood of the AGRP (or VP) that is associated with the main verb will have to be voided by some independent mechansim; recall that auxiliaries do not assign a thematic role to their complements, and are thus not in a position to L-mark the latter.

Ouhalla (1988, 1989) discusses another set of HMC violations, from Berber, where a clitic moves over a number of empty head positions and the verb, into the highest c-commanding functional head, either independently of P or incorporated into P. In the following examples, the clitic attaches to the complementizer and the auxiliary, respectively:

(48) a. U ay-t y-arzm-n sg-tghnjayt
who COMP-it N-open-N with spoon
'Who opened it with a spoon?'

b. U ay-sg-as y-arzm-n tawwart
who COMP-with-it N-open-N door
'Who opened the door with it?'

(49) a. Ad-t y-arzm sg-tghnjayt dudsha
will-it open-3S with-spoon tomorrow
'He will open it with a spoon tomorrow'

b. Ad-sg-as y-arzm tawwart dudsha
will-with-it open-3S door tomorrow
'He will open the door with it tomorrow'

To account for these facts, Ouhalla proposes to constrain head movement solely in terms of the ECP. Under this approach, movement of the verb to AGR and subsequent movement of the V-AGR complex to T voids barrierhood of VP and AGRP respectively, allowing for antecedent government; the clitic can then move over the TP barrier, voiding the latter's barrierhood itself.[35]

Two objections can be raised against this proposal. First, it is not a priori clear whether just *any* head can lexicalize a theta-assigner, in order to enable the latter to L-mark its complement; under that perspective, it would remain a mystery why clitic climbing does not occur in French: if the infinitival verb were to remain in VP, an option that is open to it in view of the fact that verb raising is optional with infinitives, the clitic could move to the matrix verb, via intermediate head positions which it lexicalizes, voiding barrierhood of the maximal projections it passes on its way (similar to Kayne's (1989) account of clitic climbing in Italian). Contrary to this prediction, French does not allow clitic climbing, however:[36]

(50) a. Christina veut les lire
Christina wants them to read
b. * Christina les veut lire
Christina them wants to read

Second, Ouhalla (1989: 181) generalizes the property of inherent barrierhood to all maximal projections (cf. also van de Koot 1990, Frampton 1990), contrary to Chomsky's (1986) position that IP can only be a barrier via inheritance. This position, which is much more elegant than Chomsky's, poses a problem, though, in periphrastic tenses. Consider the following abstract structure:

(51) $[_{AUXP}$ AUX $[_{AGRP}$ AGR $[_{ASPP}$ ASP $[_{VP}$ V clitic ...

AGRP must be a barrier for movement of the verb and the clitic: there is no head position for either of these elements to lexicalize, in order to L-mark AGRP. AUX selects, but does not L-mark its complement (cf. Pollock 1989), so it cannot do the job, even though it is lexical. The clitic cannot void barrierhood of AGRP (the barrierhood of VP and ASPP having been voided by previous verb raising to AGR), because it cannot occupy the AUX position, for reasons discussed above: a clitic is external to verbal

inflectional morphology and must therefore have attached to the auxiliary after the latter has picked up its tense and agreement morphology; thus, after raising of the auxiliary, the clitic still has to cross a barrier. The only option for it would be to move into the γ-marked trace of the auxiliary, which would make the latter irrecoverable at LF, an undesirable result; but even so, one barrier would be crossed.

Thus, although Ouhalla's analysis makes a very elegant generalization with respect to inherent barrierhood, a number of phenomena in the syntax of clitics require a more elaborate account. This concludes the discussion of the validity of the HMC. It has been shown that, although cliticization in Romance is an instance of head movement, left-adjoining the clitic to AGR, it cannot be constrained in terms of the HMC; it is not as local as that condition requires, in that it allows movement over intermediate head positions, both overt and previously emptied ones.[37] In the remainder of this study, a mechanism will be proposed which deals with these problems and allows a more unified account of phenomena in the syntax of clitics, making use of a relativized version of minimality (Rizzi 1990).

Notes

1. Notice that Baker's (1988: 64) Government Transparency Corollary (GTC) relativizes the HMC somewhat, restricting it to overtly realized heads.

   (i) **Government Transparency Corollary (GTC)**

   A lexical category which has an item incorporated into it governs everything which the incorporated item governed in its original structural position

   Consider an abstract structure like the following:

   (ii) $[_{XP}\ X\ [_{YP}\ Y\ [_{ZP}\ Z\ \ldots\ ]]]$

   If Y incorporates into X, the government domain of the latter is extended with that of the former, as a consequence of the GTC; Z can thus incorporate into the X-Y complex, without the HMC filtering this move out.

2. This is the so-called conjunctive version of the ECP; other, weaker interpretations have been proposed in the literature, whereby either one of the requirements suffices on its own to γ-mark a trace (Lasnik & Saito 1984, 1992). Chomsky (1986) suggests a reduction of the ECP to antecedent government. For the present discussion, nothing seems to hinge on this choice.

3. In this respect, Baker (1988) diverges from Chomsky (1986), who assumes that heads and their maximal projections share all features, except bar-features. Under that scenario, antecedent government and head government would collapse in standard cases of head movement, because the antecedent is incorporated in the only governing head position available.

   In instances of head movement where an intervening head is skipped, the two requirements of the ECP do not collapse; in this case, it is crucial that the conjunctive definition of the ECP is adopted or the ECP is reduced to antecedent government, since otherwise unbounded movement of a head will not be checked.

4. An example in point is the discussion of V-to-I raising by Chomsky (1986): by moving the verb into I, the latter can lexically discharge its thematic role to the VP, thereby voiding VP's opacity.

5. If one assumes Chomsky's (1986) original version of generalized minimality, the predictions of HMC and ECP overlap completely. In the remainder of this study, the ECP account sketched above will be crucially used, in a fashion similar to proposals by Ouhalla (1989).

6. Van Riemsdijk (p.c.) suggests that this fact can be used to argue against analyzing these phenomena as instances of P-incorporation. Alternatively, this fact can be taken to be the impetus for P-incorporation: the affixal P needs to be licensed by a lexical head; the latter approach allows simpler lexical representations than the former (cf. Baker's (1988) Uniformity of Theta Assignment Hypothesis (UTAH)), and it allows a more isomorphic link with conceptual structure (cf. Jackendoff 1990).

7. Clitics in some languages may, unlike their Romance counterparts, undergo both steps in the incorporation process; a case in point is Kru cliticization. Consequently, morphological incorporation does not automatically lead to locality, as clitic climbing in these languages indicates; additional conditions, especially in terms of morphological subcategorization, are at work (cf. chapter 2).

8. The obligatory character of this raising in finite clauses is explained by Pollock (1989) in terms of the operator status of [+finite] T: the empty verb position can function as a variable in that case.

9. Even within the Romance language family, there are differences in the distance over which verbs raise; whereas Italian finite verbs behave on a par with their French counterparts (i), infinitivals in this language raise further than their French counterparts (ii-iii).

   (i) Gianni non mangia più/niente/mica
   Gianni NEG eats more/nothing/not a thing

   (ii) per non mangiare più/niente/mica
   for not to eat more/nothing/not a thing

   (iii) *per non più/niente/mica mangiare
   for not more/nothing/not a thing to eat

10. Koopman cites the following example of an inflected infinitive from Portuguese, which shows the co-occurrence of agreement morphology and an overt subject NP:

    (i) E difícil [as raparigas lerem este livro]
    is difficult the girls read-AGR this book

11. For French similar observations can be made, though the facts are less robust than in Italian.

12. For present purposes, it doesn't make any difference whether the subject is base-generated in the specifier of VP, or in a sister-position of VP, dominated by V^n (cf. Sportiche 1988).

13. There is one more position where the floating quantifier can occur:

    (i) Les enfants ont vu ce film tous
    the children have seen that film all

    Under the VP-internal subject hypothesis, this does not pose a problem: the specifier position where the subject originates can be on either side of the VP, since the subject NP itself raises to the specifier of AGR to receive case in any event. Directionality of theta role assignment would have to be relaxed in these cases.

14. Subject clitics will not be discussed in great detail in this study.

15. Pijnenburg (1991) gives a nice overview of this discussion in the literature.

16. In these configurations, the clitic can be taken either to be a spell-out of case features of the verb (Borer 1984), or to be an instance of object agreement. Note that in either case, it would exceptionally be prefixal, not suffixal.

17. This phenomena cannot be observed in French, because of the very limited extent to which this language allows clitic climbing, viz. only with causative verbs and perception verbs.

18. These developments are not explicitly taken into consideration in the discussion that Pijnenburg (1991) offers of these issues.

19. The only reading under which this sentence is well-formed is one in which the full NP has been right- or left-dislocated, indicated by comma intonation.

(i) Christina le lit, le livre
Christina it reads the book

Dislocated elements behave differently from regular complements, in the sense that they seem to have inherent case and inherent thematic features.

20. In the remainder of this study, the labels NP and DP will be used interchangeably, in view of the fact that nothing hinges on a choice between these for the issues under discussion.

21. Van Riemsdijk (p.c.) suggests that these facts can also be captured under the assumption that any lexical projection needs to be 'covered' by a functional projection (cf. Van Riemsdijk 1990 for prepositions); an empty D would have to be re-lexicalized at the relevant level of representation under this assumption.

22. The reasoning as it is presented here does not hold under the more abstract conception of morphology that has been worked out in several publications by Pullum and Zwicky, whereby a collection of abstract features is spelled out in morphology, independent of the hierarchy of these features in syntactic configurations (cf. Pullum & Zwicky 1992). Such an approach puts a heavier burden on the lexicon than on syntax, in view of the fact that all possible combinations of features must be separately listed, whereby interesting generalizations are missed.

23. Another apparent instance of such a process is the endocliticization that shows up in future and conditional in Portuguese:

(i) ver-me-á
see-me-FUT/3S

(ii) levá-lo-iam
raise-it-COND/3P

Further on in this study, it will be shown that these cases only apparently involve instances of endoclitics (chapter 4).

24. Under Kayne's hypothesis, the infinitival verb of Romance languages that have encliticization adjoins to a maximal projection (IP); this goes against the strong version of X-bar theory that is adopted in this study. Alternatively, it can be conjectured that the verb moves into C; recall in this connection that the Romance languages used to have V-to-C in previous stages of their

development (cf. Adams 1987 and Vance 1989 for French, Fontana 1992 for Spanish), and still have residual verb second to some extent (Rizzi 1991).

25. This generalization holds for non-ergative type languages.

26. The distinction between clitics and affixes like object agreement will be discussed in more detail in chapter 4.

27. Thus, clitic facts might prove to be relevant in the discussion between representationalists and derivationalists in generative grammar (Koster 1987, Chomsky 1982).

28. A number of other tests have traditionally been used to argue for the head status of pronominal clitics, viz. their inability of being (a) stressed, (b) modified, (c) conjoined, (d) used in isolation, or (e) topicalized. These tests are unreliable, however, since they apply equally to phonologically reduced pronominal elements (what Zwicky 1977 calls 'simple clitics'), which distributionally behave on a par with maximal projections (cf. Berendsen 1986, Zwart 1992).

29. Chomsky (p.c.) has suggested an analysis, whereby the element that is moved in cliticization is the maximal projection of the clitic, not just the head; only in a later stage of the derivation is the head moved out of its maximal projection, and adjoined to a governing head. As I have indicated elsewhere, this analysis has a number of drawbacks (Haverkort 1992). It fails to explain at what stage of the derivation and for what reasons, the clitic has to leave its maximal projection and move on as an independent head (see chapter 3).

    It also needs to explain the distinction between Italian and French with respect to clitic climbing (see chapter 4), since these languages do not exhibit a similar asymmetry with respect to A-bar movement of maximal projections. If clitic movement were (at least partly) movement of a maximal projection, it would have to be A-bar movement, since nothing triggers A-movement; moreover, A-movement would interfere with raising of the subject to its s-structure position (cf. Rizzi's Relativized Minimality). Germanic clitics can license parasitic gaps, an indication of their operator-like status; this is completely impossible in Romance, though (Chomsky 1982, Sportiche 1983a).

    Finally, the close interaction between the distance over which the verb moves and the distance over which the clitic can move remains mysterious under such an approach (see chapter 2, and remarks below).

30. Notice that the ungrammaticality of the first example should receive another explanation: the verb has not raised all the way to AGR. Similar reasoning does not hold for the (b)-example, however, as indicated by the position of the verb with respect to the negative adverb.

31. There is no general adjacency requirement between the subject and the verb in Romance, as there is in Kru (cf. chapter 3). Parentheticals can occur in that position; these elements are sensitive to syntactic structure, so this observation cannot easily be discarded as a PF phenomenon, under standard assumptions about the syntax-phonology interface (Selkirk, p.c.).

32. This does not hold for Italian indirect object *loro*; as has been shown by Cardinaletti (1992), this element, even though it shares a number of properties with pronominal clitics, has the distribution of a maximal projection: it occurs in the specifier of TP in simple tenses and in the specifier of ASPP in periphrastic tenses, not in the regular indirect object position:

    (i) Il professore diede loro l'autorizzazione
    the professor gave them the authorization

    (ii) Il professore diede l'autorizzazione *loro/ agli studenti
    the professor gave the authorization them/to the students

33. There is some reason to believe that the prepositional clitics in French do not behave as heads through the whole derivation. Consider the following contrast (cf. van Riemsdijk 1992):

    (i) Le livre dont l'auteur menace d'en revenir
    the book whose the author threatens to therefrom return

    (ii) *La ville dont l'auteur menace d'en revenir
    the city wherefrom the author threatens to thereof return

    This contrast looks similar to the cases of pseudo-opacity discussed by Rizzi (1990), in that in the second case, the operator associated with the relative clause is apparently prevented from antecedent-governing its trace, due to the barrier created by the clitic *en*. Such a blocking effect can only occur if the clitic occupies an A-bar position, like the operator. In the first case, no such blocking configuration arises: each antecedent is closest governor for its trace.

    Another indication for the deviant status of prepositional clitics in terms of X-bar theory derives from the fact that these clitics can climb in French, an

option that is restricted to causative verbs and perception verbs with regular object clitics (Kayne, p.c.). The resulting sentences have an archaic flavor, though, and are not accepted by all speakers.

Moreover, these clitics can be separated from the verb, even though here, too, the result makes a slightly archaic impression (cf. Miller 1991: 174).

(iii) Il a délibérément choisi de n'en pas tenir compte
he has deliberately chosen NEG thereof not take account

These clitics will not be discussed in detail in the present study, but the above considerations caution against treating them completely on a par with regular object clitics; the cases of cliticization from an NP are thus inconclusive with respect to the X-bar status of clitics, since it is unclear exactly where the head moves out of the maximal projection.

34. This fact also shows that these cases cannot be analyzed in terms of remnant topicalization, where the VP is fronted after complements of the verb have been scrambled (Den Besten & Webelhuth 1990).

35. Whereas in Romance AGRP is hierarchically higher than TP, Ouhalla (1988, 1989, 1991) has argued convincingly that in VSO-languages the hierarchical relations are reversed: T takes AGRP as its complement (the main arguments for this proposal are summarized in chapter 5).

36. Clitic climbing in French is only allowed from a complement of a causative verb, as in the following example:

(i) Odile lui fait écrire une lettre à Paul
Odile him makes write a letter to Paul

Clitic climbing in French is also licit from the complements of perception verbs (cf. discussion in chapter 3).

37. Previously emptied head positions are not problematic, under the assumption of Baker's (1988: 64) Government Transparency Corollary: Under the reasoning adopted here, the clitic will move over previously emptied verbal and inflectional head positions, in addition to the overt head positions discussed in this section; the GTC renders these violations of the HMC harmless.

Chapter 2

Clitic Movement

2.1 Constraints on cliticization

Cliticization, although an instance of head movement, is not constrained in terms of the HMC. A looser constraint must apply, which allows the clitic to skip intermediate head positions, even when these are overtly realized. The obvious candidate is the ECP: a clitic can move over any distance, as long as it does not cross a barrier. A barrier would prevent the clitic from antecedent-governing its trace, and antecedent-government is the only relevant licensing principle for the clitic trace. If head government, the other part of the ECP, were the only relevant constraint for the clitic trace, argument clitics would be expected to raise unboundedly, only invoking weaker subjacency violations, on a par with traces left by wh-movement of object NPs, contrary to fact.

If the constraint sketched above is correct, it entails that only L-barriers are relevant for the clitic-trace relation. Minimality barriers are not, at least not in the sense of rigid minimality of Chomsky (1986); if the latter were, any movement over an overt head

would create an inappropriate configuration, contrary to fact. Consider for instance the following definitions of minimality barrier (Chomsky 1986: 42 and Chomsky, class lectures 1987):

(1) a. γ is a barrier for β if γ is a projection of δ, a zero-level category distinct from β

b. α is a M-barrier for β iff α includes γ and δ, where γ is a maximal projection (not necessarily distinct from α) including β and δ, a head c-commanding β

The general idea behind these definitions is that a licit antecedent-trace relation holds only in case there is no head position c-commanded by the antecedent and c-commanding the trace (besides the latter's sister): a closer governor prevents government by a more distant governor. This creates a paradox: a head position that intervenes between the clitic and its trace can create a minimality barrier, but as instances of clitic movement where an overt head is skipped indicate, this must be what is happening. One solution to the problem is that the clitic has not moved, but as was argued in the preceding chapter, this has all kinds of unwarranted consequences in a framework with robust functional categories and a high degree of transparency between syntax and morphology. There is an alternative: the intervening head does not create a minimality barrier. This solution forces a form of Relativized Minimality, whereby not just any intervening head creates a barrier, but only potential antecedents.[1] The precise formulation of this condition will be worked out in the next section.

Thus, lexical heads, and for that matter also functional heads, do not create minimality barriers for the clitic; only maximal projections that are not L-marked or directly dominating such a maximal projection are relevant boundaries. This still leaves the problem mentioned at the end of the preceding chapter unsolved: arguably, clitics seem to move over such L-barriers, even though that should result in an ECP violation. But

not even a weaker subjacency violation results, as the following examples indicate.

(2) a. Christina l'a lu
Christina it has read
b. Gianni la ha aperta
Gianni it has opened

The relevant part of the structure that underlies both of these sentences is as follows, where V_1 represents the auxiliary and V_2 the past participle:

(3) V_1 $[_{AGRP}$ Spec $[_{AGR'}$ AGR $[_{ASPP}$ Spec $[_{ASP'}$ ASP $[_{VP}$ NP $[_{V'}$ V_2 clitic ...

The ECP-account holds, except for AGRP, the maximal projection of the highest functional head associated with the participle V. As was mentioned before, one of the crucial characteristics of the relation of the auxiliary with its complement is that the former is subcategorized for the latter, but does not assign a thematic role to it; this can be seen from the fact that auxiliaries are the only verbs that can raise all the way to AGR in infinitival clauses is French. If they had a theta grid, the roles could not be transfered to the base position of the verb (i.e. the trace), due to the opacity of infinitival AGR in French (cf. Pollock 1989). A consequence of this state of affairs is that in the above structure in (3), the AGRP associated with the participle must be a barrier. The participle moves from its base position to AGR, through ASP, obeying the HMC. It does not move out of AGRP, so that this maximal projection is a barrier: it is not theta-governed, hence not L-marked by the auxiliary, and even if the verb were to raise out of AGRP, it would not be capable of lexicalizing the governor of this category, which is lexical of itself, nor of substituting for its trace, because that would lead to irrecoverability at LF.

Contrary to what one would expect, the clitic can move out of AGRP, without inducing any violations, not even weaker subjacency violations. The paradox can be solved fairly

easily, though, using a mechanism that is independently available in the *Barriers* framework, namely specifier-head agreement. In the following chapters, it will be shown that the same mechanism can be invoked to account for other clitic phenomena, *in casu* clitic climbing and endocliticization, allowing a unification of these processes.

Notice that in the above structural representation, not only the participal verb moves up to its AGR, but the auxiliary moves up to its own AGR, moving through T, in order to pick up the relevant inflectional endings.[2] By moving up, the auxiliary voids barrierhood of its own maximal projection and of TP, by lexicalizing T and AGR, respectively.[3] The intermediate representation is thus as follows, where only both AGRPs retain their inherent barrierhood.

(4) $[_{AGRP}$ Spec $[_{AGR'}$ V_1+T+AGR_1 $[_{TP}$ Spec $[_{T'}$ *t* $[_{VP}$ Spec $[_{V'}$ *t* $[_{AGRP}$ Spec $[_{AGR'}$ V_2+ASP+AGR_2 $[_{ASPP}$ Spec $[_{ASP'}$ *t* $[_{VP}$ NP $[_{V'}$ *t* clitic ...

The clitic has to escape the lower AGRP, without crossing a barrier. Due to movement of both verbs to their respective agreement nodes, all other maximal projections are voided of barrierhood, via L-marking: the functional heads are lexicalized, and thus enabled to L-mark their complements. Due to specifier-head agreement, the specifier positions of these maximal projections are L-marked, too; a head can L-mark its complement, the head of the complement, and via specifier-head agreement, the specifier; the only element that is exempt from being L-marked is the complement of the head that is itself L-marked (Chomsky 1986: 24).

(5) Where α is a lexical category, α L-marks β iff β agrees with the head of γ that is θ-governed by α

Chomsky (1986) and Torrego (1987) discuss cases like the following as evidence for this extension of the range of L-marking; extraction from the subject is illicit, except when

the subject has been moved into the specifier of a category which is itself L-marked.[4]

(6) a. * Esta es la autora [de la que]$_i$ [$_{IP}$ [varias traducciones t_i] han ganado premios internacionales]
This is the author by whom several translations have won international awards

b. [De qué autora]$_i$ no sabes [$_{CP}$ [qué traducciones t_i] han ganado premios internacionales]
By what author don't you know what translations have won international awards

(7) a. * He conocido el fotógrafo [del qual]$_i$ [$_{IP}$ [varias exposiciones t_i] han recorrido los Estados Unidos]
I have met the photographer of whom several exhibitions have travelled the United States

b. [De qué fotógrafo]$_i$ no sabes [$_{CP}$ [cuántas exposiciones t_i] han recorrido los Estados Unidos]
By what photographer don't you know how many exhibitions have travelled the United States

Another piece of evidence for this extension of L-marking over the specifier of an L-marked category via specifier-head agreement is discussed by Torrego (1987: 91). In the following examples, *cuántos* has been moved from the wh-object occupying the specifier of the embedded CP.

(8) a. Cuántos$_i$ no sabes [$_{CP}$ [t_i de qué autor]$_j$ [$_{IP}$ mandar t_j]]
How many don't you know of what author to send

b. ? Cuántos$_i$ no sabes [$_{CP}$ [t_i de cuáles ediciones]$_j$ [$_{IP}$ se han vendido t_j]]
How many don't you know of which editions they have sold

This type of sentence has to be derived by first moving the embedded object into the specifier of the embedded CP and subsequently moving the wh-phrase *cuántos* from this position into the specifier of the matrix CP.[5] An alternative derivation, in which two separate wh-movements take place from the embedded object position, must be excluded

in view of the fact that elements like *cuántos* cannot move out of a wh-island.[6]

(9) * Cuántos$_i$ no sabes si leíste [t_i de esos] el año pasado
how many don't you know whether you read of those last year

The alternative derivation can be excluded in terms of Relativized Minimality: only if *cuántos* moves along with the wh-object to the latter's specifier landing site, does the object as a whole not create a minimality barrier for its trace. Another relevant observation, not made by Torrego (1987), is that an L-marked category does not automatically retain its transparency when it is moved; when it is moved into a non-L-marked position, it becomes opaque for government and movement again (cf. Haverkort 1990).[7] Consequently, the intermediate specifier must be transparent, and this effect can only be obtained by assuming that it is L-marked itself, via specifier-head agreement.

A direct consequence of this extension of L-marking over all categories that agree with the head of the L-marked category, is that all specifiers of the L-marked categories in the above structure in (4) are L-marked, hence transparent for movement.[8] Barrierhood of AGRP can be voided by moving this whole category vacuously into the specifier of the transparent category, TP.[9] This movement is vacuous,[10] and it renders AGRP transparent.[11] Notice that only substitution of a specifier position gives the right result: adjunction to a non-argument maximal projection does not void the barrierhood of the element that is adjoined.[12]

This account of clitic movement raises questions as to the status of the specifier position in terms of the A/A-bar distinction. In regular instances of this construction without a clitic, the subject-NP must raise to the specifier of the finite AGR associated with the auxiliary, through intervening A-positions, in order to receive nominative case. The most straightforward assumption seems to be that all these positions can be used by the moving

subject, hence end up being A-positions at s-structure; the necessary binding conditions of A-movement can be met if the specifier of each governing category (AGRP) is successively occupied; the lower AGRP, being non-finite, arguably does not count as a governing category (cf. Chomsky 1985: 176, Everaert 1988).

The vacuous movement of the barrier AGRP arguably is not an instance of A-movement, but more on a par with A-bar movement: it is not forced by case and thematic considerations, unlike regular instances of NP-movement (Burzio 1986), and it does not involve an NP (an option only open to A-bar movement). Moreover, as will be shown in later chapters, specifier positions that are traditionally considered to be standard cases of A-bar positions (specifier of CP, cf. chapter 3) can participate in similar vacuous movement; as has been argued by Rizzi (1990), the specifier of TP is inherently an A-bar position[13] (cf. also Cardinaletti & Roberts 1991). Other features, such as the unbounded character of A-bar movement are not observed for independent reasons: the maximal projection that is moved, not being the complement of a head that can act as proper governor, must satisfy the ECP via antecedent government, and is thus, like adjuncts, much more constrained in its freedom to move unboundedly; unlike for instance object NPs, these elements can not even cross one barrier without violating the ECP.

These considerations do not necessarily mean that the specifier positions that can be used by this type of vacuous movement are A-bar positions. Here, a hypothesis of Webelhuth (1989) can be adopted, that specifier positions are basically hybrid; their status as A/A-bar positions is determined once and for all when they become part of a certain type of chain. This fits in nicely with a Relativized Minimality framework: only specifier positions that take on A-status count as antecedent for an NP-trace, whereas others do not (cf. however Rizzi's (1990) conjecture that the specifier of TP is by definition an A-bar position, which would entail a strong constraint on vacuous movement of the type discussed; see also above).

Notice that the A-bar position created by vacuous movement of a barrier does not cause problems for other elements that are moved into an A-bar position at s-structure: these elements either escape barrierhood via adjunction, or they make use of the same mechanism that renders the barrier transparent for clitics. Therefore, the vacuously moved barrier does not create a minimality barrier for variables other than its own trace, since all potential alternative variables are embedded in it; hence the vacuous character of the movement. Thus cases like the following are ruled in, as expected:

(10) a. Quand est-ce que Jean l'a donné à Paul?
When is it that Jean it has given to Paul

b. $[_{CP}\ WH_i \ldots [_{AGRP}$ Jean l_k'a_j $[_{TP}\ [_{AGRP}$ donné t_k à Paul $t_i]]_l\ t_j\ [_{VP}\ t_j\ t_l \ldots$

The closest governor for the variable left by A-bar movement of the wh-adjunct is an intermediate trace to the left of the moved AGRP; since no trace is left to the right of this category, Romance languages being right-branching, no Relativized Minimality is invoked. In cases that involve vacuous movement in the above sense, no conflict will arise between the variable left by the vacuous movement and the variable left by A-bar movement of an element included in the vacuously moved element. The vacuous movement renders the moved barrier transparent for the clitic and other elements that undergo movement, independently of the order in which the movements take place.[14] Schematically, the relevant antecedent-variable relations are as follows:

(11) $WH_i \ldots [_{XP} \ldots t_i \ldots]_j \ldots t_j$

In the framework as it is sketched here, the freedom of the clitic in moving up is constrained by the distance over which the verb moves; this movement is in turn constrained in terms of properties of functional heads: opaque or transparent for transmission of thematic information to the foot of the chain, the only element that retains the ability to assign case and theta-roles. This is a strong generalization, in the

sense that no independent parameters have to be invoked for cliticization.

A prediction this account makes is that if more than one barrier intervenes between the clitic and its target position, or if there is no specifier position that can function as host of the vacuous movement, or a combination of these two situations, the clitic is forced to find an appropriate host within that barrier. The first situation will be discussed in the chapter on clitic climbing; the second situation will never arise, unless a verb does not raise at all, and the VP remains a barrier, or the verb only raises to T, voiding the barrierhood of VP, but leaving TP a barrier. This is the situation that arises in French infinitival clauses, as discussed above: the verb optionally raises to T, but not higher, unlike its Italian counterpart. In the present framework, this implies that the clitic must find a host within TP.

The generalization underlying the s-structure distribution of clitics makes a crucial distinction between lexical and functional categories: clitics are only allowed to attach to the latter, never to the former (cf. Kayne 1989, 1990, Rosen 1989);[15] this information can be included in the morphological subcategorization frame of the clitic. Following this conjecture, the only position available for the clitic to attach to in French infinitival clauses is T, i.e. the highest functional head accessible (cf. also Ouhalla 1989). Under the assumption that AGR lowers at s-structure in those cases, and raises at LF in order to satisfy binding theory requirements (Chomsky 1991), the clitic can uniformly attach to a functional head that incorporates agreement features.[16] In the preceding chapter, some evidence for the dissociation of clitic and lexical categories was based on the distribution of clitics in relation to the verb and its inflectional endings.

Consider the extraction of a pronominal clitic from a complement of an adjective. The structure underlying these cases, which were discussed in the preceding chapter, is as follows:

(12) V [$_{AP}$ NP [$_{A'}$ A clitic]]

In these cases, the AP is either theta-governed by the verb or not, depending on whether the verb is a copula or not. In case the AP is theta-governed, the clitic, which is itself selected by the adjective, is free to move out of the AP, since there is no barrier blocking proper government of its trace; clitic movement from within complements is never blocked under this perspective. In case the AP is not L-marked, i.e. in copula constructions, its barrierhood has to be voided, in order to allow the clitic to move out; this effect can be obtained by moving the AP as a whole into the specifier position of TP, which has been L-marked indirectly via specifier-head agreement, due to raising of the verb to AGR.[17] Thus, a similar close interaction between clitic movement and movement of other heads which c-command the clitic can be observed in these cases.

The movement that is involved in these derivations has been called *vacuous movement* because it cannot be directly detected in the resulting linear string. Partly, this is a direct consequence of the fact that the position a barrier maximal projection moves into has become L-marked due to previous head movement; thus, there cannot be a head remaining behind to the right of a leftwardly moved maximal projection: the head associated with the specifier that acts as landing site has moved out in order to establish an L-marking relationship. Other elements, such as adverbials, can be adjoined to the moved maximal projection, and can thus move along with it, under the assumption that the upper segment of such a complex category moves. Moreover, adverbials in French are not rigidly restricted to one position; as has been argued in some detail by Schlyter (1974) in her study on the distribution of adverbs, they can attach under a mother node in any position with respect to their sisters, i.e. they are not restricted to certain positions in the linear string. Therefore, it is impossible to use these elements as evidence in favor of vacuous movement.[18]

Within the framework sketched here, agreement between past participles and clitics, as in the following examples from French and Italian, can be handled along the lines suggested by Chomsky (1991):

(13) a. Jean les a repeint-es
Jean them has repainted-AGR
b. Gianni la ha appert-a
Gianni it-F has opened-AGR

Following Kayne (1988), Chomsky assumes that the clitic has to move to the specifier of a special object agreement node; in the framework developed here, this role could be taken over by the AGR-node associated with the participle (in line with Belletti's (1991) remarks about agreement in participles and the Mirror Principle), so that agreement of the auxiliary with the clitic can be excluded automatically. The agreement on the participle is an instance of specifier-head agreement under this perspective. The phrase that the clitic heads moves into this specifier position, in order to receive case, under an extension of Baker's (1988) idea that heads are devoid of thematic roles (cf. discussion in chapter 1). After the maximal projection of the clitic has received case and is thus licensed, it is not forced to move on, and under the minimal effort principle, it does not (Chomsky 1991, 1992); the clitic, however, still needs to satisfy its selectional requirements, and therefore, it moves further up. Under this approach it is at once clear that the clitic cannot adjoin to the lower AGR, in the extended projection of the participle, but must move on to the higher AGR, in the extended projection of the auxiliary: movement of the clitic to the lower AGR from the latter's specifier position would involve lowering, and hence result in a binding theory violation. Movement of AGRP is thus forced, since it is the only way for the clitic to get licensed properly.[19]

2.2 An A/A-bar distinction for head movement

The account of the non-local character of clitic movement in terms of the ECP, as it was sketched in the preceding section, did not take into account the blocking status of intermediate heads which can act as potential antecedents and thus create a minimality barrier (cf. Rizzi 1990). This was not a necessary assumption, since clitics could apparently skip any type of head position. There are some observations, though, which support a distinction between two types of head movement, sensitive to the blocking nature of different sets of head positions.

Proposals to this effect have been sketched in the literature (Koopman 1984, Li 1990, Rizzi & Roberts 1989). Koopman (1984) discusses V-to-I and predicate clefts (V-to-C) in Kru, and proposes to distinguish verb movement to INFL from verb movement to C, suggesting a parallel with A- and A-bar binding, respectively. One important difference is the local character of V-to-I versus the non-local character of V-to-C.[20]

(14) a. * n la_i yué e_i/la_i ka mlI
I call children call KA leave
'I leave to call the children'

b. la_i n da yué-e la_i ka mlI a
call you PERF children-DEF call KA leave WH
'Have you left to call the children?'

Koopman argues that a resumptive copy of the focused verb has to be left, in order to avoid an ECP-violation;[21] As the (a)-example shows, this option is not open to regular V-to-I movement cases, which do not need it anyway. Since C is the landing site both for wh-phrases and for focused verbs, Koopman generalizes over the two in terms of A-bar movement: C is an A-bar position. Koopman's observations can be expressed in a similar fashion in generalized X-bar structure.

As was discussed in the preceding chapter, verb raising cannot be blocked by negation: the verb must move over negation, before the latter can adjoin to AGR, contrary to what has been suggested in the literature.

(15) a. Jean ne le disait jamais
Jean NEG it told ever
b. Gianni non lo diceva mai
Gianni NEG it told ever

In these examples, the base position of negation is indicated by the negative adverb, which remains behind in the specifier of NEGP. The clitic must attach external to the verbal inflection, and the negation is external to the clitic; by transitivity, the negation must be external to the verbal inflection.[22] The non-blocking nature of negation for the verb, or more precisely T, can be explained if T raises into a position of a different nature than NEG; then NEG cannot constitute a closer governor in terms of Relativized Minimality, if a bifurcation is made within the category of X^0-elements. A solution suggests itself: as was argued in chapter 1, the highest functional head in tensed clauses[23] behaves in an operator-like manner, and therefore triggers verb raising. Movement of the V-T complex into AGR is thus an instance of A-bar movement,[24] whereas NEG in its base position constitutes an A-position, which cannot have a blocking effect. Heads which have traditionally been associated with A-bar movement are C and AGR; these elements have in common that they can be deleted at LF (cf. Lasnik & Saito 1984, Chomsky 1991, respectively). NEG, on the other hand, although its specifier behaves like an adjunct (cf. Rizzi 1990), cannot be deleted at LF, and neither can lexical elements. Thus, with a small subset of intervening heads, minimality barriers do arise for clitic movement.

This way of looking at the facts offers an explanation for the observation that negation in a simple clause does not block clitic movement over it, whereas the clitic can never

climb over embedded negation, as indicated by the following contrast:

(16) a. Gianni non li vuole vedere
Gianni not them wants to see
b. * Gianni li vuole non vedere
Gianni them wants not to see

It has to be ensured that the clitic can escape the lower AGR if negation is absent in the lower clause; suppose this is possible, because infinitival AGR is more of an A-position than finite AGR;[25] this distinction can be extended over non-finite verbal morphology in general. Clitic movement being A-bar movement (adjunction, not substitution), the clitic can skip the embedded AGR. Under the null hypothesis, the clitic must still move over negation, before the latter adjoins to its AGR, so the question arises how negation can nonetheless create a barrier for the clitic to climb. Only after the clitic has moved into the matrix AGR, does negation move into its AGR, which has already been occupied by the verb, via A-movement. Contrary to suggestions by Zanuttini (1990, 1991), negation in Italian, like its French counterpart (cf. Pollock 1989), behaves as a clitic; as the following example indicates, it moves along with the verb to COMP, in cases of subject-auxiliary inversion:

(17) Suppongo [non essere [la situazione suscettibile ...
(I) suppose NEG to be the situation susceptible ...

Since the negation is not morphologically subcategorized by this AGR, it will adjoin to it, like a clitic, thus creating an A-bar position; the resulting representation therefore shows a minimality effect of the negation with respect to the clitic. Both of these elements create an A-bar position via adjunction, and the former thus acts as potential closer governor for the clitic trace in the embedded clause. Schematically:

(18) CL_i+AGR T V C NEG_j+AGR t_j T V t_i ...

The negation is clause bound, so it cannot raise all the way up to the matrix AGR without creating an illicit LF-representation, even though such a move would not violate the ECP. Notice that the clitic must also move past the (empty) C position on its way up, even though arguably this element constitutes an A-bar position. C does not act as a minimality barrier for the clitic, because the latter is moved over it as part of a maximal projection: the lower AGRP is moved to the specifier of CP (cf. discussion in chapter 3); a similar escape possibility is not available for the processes which obligatorily take place within AGRP. Negation thus does not create a barrier for the clitic in an absolute sense, but just relatively.

For obvious reasons, cliticization over negation in simplex clauses is not blocked: here negation and the clitic adjoin to the same head, so that no potential X^0 antecedent intervenes between either of them and its trace.

(19) NEG_j+CL_i+AGR T t_j V t_i

Thus, the status of a position in terms of the A/A-bar distinction can be determined in one of two ways: either a position has a certain characteristic inherently (C and AGR are inherently A-bar heads, the other categories are A-heads), or its status is determined by the type of movement that has taken place (adjunction versus substitution). This correlation is not perfect, though: an element can substitute into a head that has A-bar properties, and thus inherit these A-bar properties via percolation. On the other hand, adjunction to an A-position does create an A-bar relationship, because no percolation of the relevant features is involved. The verb substitutes in a subcategorized slot in AGR and morphologically incorporates, thus unifying its features with those of AGR. As was mentioned in the preceding chapter, infinitival AGR can suppress features of the verb,

so that the verb no longer acts as an independent antecedent: AGR has taken on that function, and since AGR is inherently an A-bar position, it A-bar binds the trace of V-T. No such morphological unification takes place in case of cliticization, since the clitic (and in a similar sense negation) does not become part of AGR in the relevant sense (only syntactic movement takes place, but no morphological incorporation, in the terms of Travis 1988); consequently, the clitic retains its independent antecedent status, and being in an adjoined position, not m-selected by AGR, it A-bar-binds its trace (20b).[26] AGR does m-select T (20a). This distinction is schematized below:

(20) a. $[_{AGR}$ T ---]
b. $[_{AGR}$ clitic $[_{AGR}$ $[_{T}$ V+T] AGR]]

There need not be agreement between specifier and head in terms of A/A-bar properties, as can for instance be seen in negation: although the head of this projection does not block antecedent-government by A-bar elements, its specifier does, as noted by Rizzi (1990).

(21) a. Il n'a pas résolu beaucoup de problèmes
he NEG has not solved many of problems
b. Il n'a pas beaucoup résolu de problèmes
he NEG has not many solved of problems

Whereas the former sentence is ambiguous between a reading with both narrow and wide scope of *beaucoup* with respect to the negation, only the narrow scope reading is available in the second sentence. Rizzi explains this in terms of the intervening negative adverb, which blocks the antecedent-trace relation of the quantifier at LF; in the (a)-sentence, no ECP violation results, since the verb governs its object, which pied-pipes at LF.

The A-bar status of AGR explains the clause-bounded nature of verb movement: once the verb has incorporated into T and this complex in turn into AGR, it cannot incorporate into another element, even disregarding the fact that it is morphologically saturated, unless it moves via A-bar movement. Thus, C is still open to the verb (cf. verb focussing in Kru and verb second in Germanic). If the verb were to incorporate into an A-element, it would create an improper binding configuration. The A-bar character of V-to-C, and the A-bar character of V-to-AGR, can be illustrated with imperatives in Romance. This construction type involves V-to-C, as can be seen from the fact that imperatives are restricted to root contexts. Moreover, some evidence can be derived from older stages of French, where the subject of imperatives could be overtly expressed in the form of a pronoun.[27]

(22) a. Einz, m'oci tu
thus, me kill you
b. Mais vous pleurez et je rirai
but you cry and I will laugh

As can be seen from these examples, the verb can both precede (a) and follow (b) the subject in positive imperatives. The inversion that can be observed is indicative for V-to-C. A last argument is derived from work on language acquisition: as Haverkort & Weissenborn (1991) observe, children start putting the verb in the right position with respect to the clitic at the same time when they start showing subject inversion in questions; this can be taken as evidence for the maturation of the same underlying process, viz. V-to-C raising, due to the maturation of a C-projection in turn (cf. Penner 1991, Schaeffer 1991). If positive imperatives indeed involve V-to-C, the above analysis predicts that the clitic cannot raise all the way up to C, because that would leave the closer A-bar position AGR in between it and its antecedent. It therefore must obligatorily attach to AGR, while the verb ends up in C;[28] the resulting order is thus verb-clitic, not the canonical clitic-verb. This prediction is borne out, as the following examples indicate:

(23) a. Lisez-le!
read it
b. Donne-le!
give it

Thus, the framework sketched here rightly predicts the deviant order between clitic and verb, since it is the only order that is allowed, when both AGR and C are A-bar elements.[29] It has the additional advantage that clitics can be assumed to uniformly left-adjoin in Romance (cf. Kayne 1990, 1991a); no stipulations have to be made to ensure that the clitic adjoins to the appropriate side of the verb in different constructions.[30] Imperatives are thus an instance of residual verb second, in the sense of Rizzi (1991).[31]

In the literature, the A-bar status of clitic movement has been discarded on the basis of the observation that clitics in Romance can never license parasitic gaps (Chomsky 1982, Pijnenburg 1991, Sportiche 1983a), as shown in the following examples.

(24) a. I libri che$_i$ gli dobbiamo far mettere t_i nello scaffale invece di lasciare e_i sul tavolo
The books that we must make him put on the shelf, instead of leaving (them) on the table
b. * Glieli$_i$ dobbiamo far mettere t_i nello scaffale invece di lasciare e_i sul tavolo
We must make him put them on the shelf, instead of leaving (them) on the table

(25) a. Quel document$_i$ avez-vous fait signer t_i par le président en mettant e_i en évidence sur son bureau
Which document had you signed by the president by obviously putting (it) on his desk
b. * Vous l'$_i$ avez fait signer t_i par le président en mettant e_i en évidence sur son bureau
You had it signed by the president by obviously putting (it) on his desk

The fact that clitics do not license parasitic gaps does not, however, provide evidence

against A-bar status of clitic movement. To see why this is the case, consider some standard examples of parasitic gap constructions; the parasitic gaps are licensed by an operator-bound trace at s-structure.

(26) a. Which man did John interview, before giving the job?
b. Which man did John interview, before hearing of the plan you proposed to?
c. Which man did John interview, before asking you which job to give to?

As comparison of the relative acceptability of these examples indicates, parasitic gaps exhibit sensitivity to islands (complex NP and wh-island, respectively). Chomsky (1986) argues that this can be taken as evidence for movement of an empty operator in the adjunct. This empty operator moves to an adjoined position, connecting with the trace of the real gap, to form a composed chain; the links of this chain, like those of any chain, must obey 0-subjacency.

(27) Which papers$_i$ did you file t_i [$_{PP}$ O_i [$_{PP}$ before [PRO reading e_i]

(28) If C = (α_1,...,α_n) is the chain of the real gap, and C' = (β_1,...,β_m) is the chain of the parasitic gap, then the composed chain (C,C') = (α_1,...,α_n,β_1,...,β_m) is the chain associated with the parasitic gap construction and yields its interpretation (Chomsky 1986: 56)

Now consider the situation in parasitic gap constructions involving clitics. Here, too, the parasitic clitic chain needs to compose with the chain associated with the real clitic under 0-subjacency, in order to be licensed. The highest head the clitic operator can raise to is the preposition; it cannot pass the adjunct PP boundary, since that would invoke an ECP-violation.

(29) clitic$_i$ ... t_i [$_{PP}$ P + O_i [... e_i ...

In this structure, the empty operator is not 0-subjacent to the trace of the clitic, because the non-L-marked PP intervenes between the two;[32] the option of adjunction to a maximal projection to escape the latter's barrierhood is not available to the X^0 operator. A crucial assumption for this reasoning to hold is that the empty operator is indeed an X^0 and not a maximal projection. Otherwise, adjunction to PP could save the structure, contrary to fact. Under the assumptions of Relativized Minimality, *O* has to be a head, since otherwise it cannot undergo chain composition with the chain of the real gap, the latter not being a proper potential antecedent for it. Thus, this explanation forces the adoption of the following constraint on chains:

(30) **Homogeneous Chain Condition (HCC)**

A chain $(\alpha_1,\ldots,\alpha_n)$ is licit iff every α_m has the same projection level as the head of the chain

This seems to be a quite natural assumption (cf. also Safir 1984): heads may only form chains with heads, and maximal projections only with maximal projections. On the basis of similar considerations, Rizzi (1990) abolished the rigid, asymmetrical form of minimality of Chomsky (1986) in favor of symmetrical Relativized Minimality. The fact that clitics cannot license parasitic gaps is thus shown to be independent of their A-bar status.[33] If correct, the above explanation poses a problem for the account of NP-movement sketched by Chomsky (1986); this point will be taken up in the next section, where it will be argued that an alternative explanation for those facts is available.

2.3 NP-movement and extended chains

One of the reasons for pursuing the vacuous movement hypothesis for clitic movement is that clitics are heads and are therefore prohibited to adjoin to the maximal projection barrier that contains them by the requirements of X-bar theory: heads can only adjoin to or substitute for heads, and maximal projections can only adjoin to or substitute for other maximal projections. There is another type of element that is prevented from adjoining to a barrier that contains it, though for different reasons. An NP undergoing NP-movement in a passive or raising construction cannot adjoin to a barrier, because that would create an improper binding configuration: the intermediate A-bar position, created by adjunction, would be locally bound by an A-position, violating Principle C of the binding theory.

The approach that Chomsky (1986) takes in these cases is to extend the array of possible antecedents, thus ensuring that a local antecedent will be available for the NP-trace: INFL participates in the chain formed by the moved object NP via specifier-head agreement:

(31) John_i seem-I_j [$_{\text{VP}}$ t_j [$_{\text{IP}}$ t_i to be intelligent]]

In this structure, VP is a minimality barrier for the NP-trace, because t_j is a closer governor.[34] The problem is solved by coindexation of the subject and the finite verb in their s-structure positions (i=j), via specifier-head agreement. Consequently, t_j can act as antecedent of t_i, thus circumventing a minimality violation. In this context, Chomsky (1986: 75) introduces the notion of Extended Chain.

(32) a. C = $(\alpha_1,\ldots,\alpha_n,\beta)$ is an extended chain iff $(\alpha_1,\ldots,\alpha_n)$ is a chain with index i and β bears index i.
b. Chain coindexing holds of the links of extended chains.

Notice that under the assumptions of Relativized Minimality[35] the trace that heads the VP cannot be an appropriate antecedent for the embedded subject position, because the former is an X^0 and the latter a maximal projection A-position. In that framework, the VP is not a minimality barrier. Chomsky's notion of extended chain seems *ad hoc*, and more importantly, it poses problems as soon as constructions other than raising, involving NP-movement, are taken into consideration. Consider the following passive sentence:[36]

(33) John_i was_j $[_{VP}$ t_j $[_{VP}$ accused t_i of the murder ...

The specifier-head agreement between the INFL and its subject will result in coindexation, voiding the barrierhood of the higher VP. Under similar reasoning, the lower VP will remain a barrier, though, which cannot be voided via coindexation, due to the absence of specifier-head agreement. An interpretation of this structure, whereby VP is a special instance of adjunction, allowing t_j to govern t_i, is not possible under a strict interpretation of minimality in the *Barriers* sense:

(34) γ is a barrier for β iff γ is a projection of δ, a zero-level category distinct from β (Chomsky 1986: 42 ff.)

Under this definition, the main verb creates a minimality barrier for government of the object trace, because both the main verb and the object are dominated by all segments of VP. Recall that auxiliaries were assumed not to L-mark their complements, thus creating a barrier anyway. Moreover, as was argued in the first chapter, the stacked VP structure arguably is more structured: the participle has an AGRP associated with it; this renders coindexation all the way down to the d-structure position of the main verb even

more awkward. In more complex sentences, like the following, the distance can be even greater.[37]

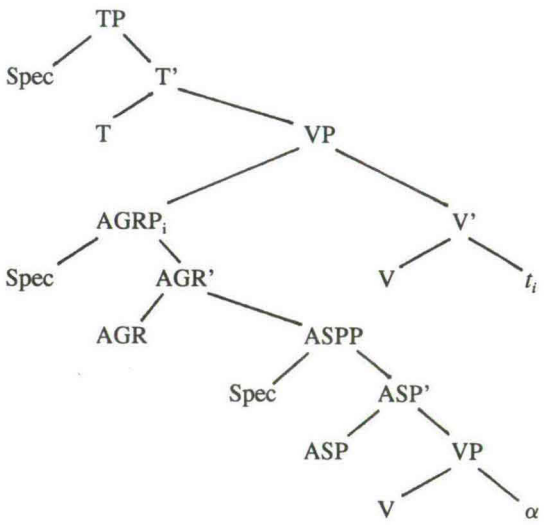
(35) John$_i$ might have been killed t_i

Under Relativized Minimality, no minimality barrier is created in these cases; nonetheless, the moved NP must somehow escape the barrier created by the maximal projection of the highest functional head associated with the verb that selects it. Consider the following more elaborate structure:

(36) John$_i$ was$_j$ [$_{VP}$ t_j [$_{AGRP}$ AGR [$_{ASPP}$ ASP [$_{VP}$ kill t_i ...

The main verb in this structure raises to its AGR, thereby voiding barrierhood of VP and ASPP; under the assumption that auxiliaries do not L-mark their complements, AGRP retains its barrierhood. Independent of whether the NP is fronted through the specifier position of the lower AGRP, it must thus cross a barrier. Even coindexation between the lower AGR and a trace in its specifier position cannot save the structure, because the former does not constitute an appropriate antecedent for the latter, and AGRP still needs to be crossed. A unified account of clitics and NPs with respect to barrierhood can be given. Although these elements differ in a number of respects, they have one property in common: they cannot adjoin to a barrier to escape it; this option is only open to A-bar maximal projections. Clitics cannot adjoin to a maximal projection, because that is prohibited by X-bar theory, and NPs cannot do that because it creates an improper binding configuration. Both elements, represented as α in the partial structure below, can escape their barrier AGRP via vacuous movement of this maximal projection to a specifier of an L-marked category. Nothing blocks movement of this category to the specifier of the upper VP, which is not occupied by a subject NP and which is L-marked through raising of the auxiliary.[38]

(37)



In more complex sentences, this process will apply successive cyclically, to obtain the same result. Under such an analysis, no extra assumptions need to be made, as under Chomsky's (1986) analysis, and clitics and NPs, two apparently distinct types of elements, can be treated in a unified manner (cf. also the discussion of long NP-movement in chapter 3), as one would expect in a modular theory.[39]

In this chapter, it was argued that clitic movement is constrained in terms of the ECP: the clitic must antecedent-govern its trace and due to the fact that clitic movement is an instance of head movement, it cannot have intermediate traces, since that would force excorporation. Adjunction to a maximal projection is also excluded under a strong version of X-bar theory. Nonetheless, there is a way for the clitic to escape a barrier, viz. vacuous movement of the barrier into the specifier of an L-marked category. If no maximal projection barrier intervenes between the clitic and its trace, the derivation can nonetheless be illicit, due to an intervening minimality barrier. In order to establish a blocking effect of some heads, but not of others, a dichotomy in head movement was

introduced: A-movement versus A-bar movement, and Rizzi's (1990) Relativized Minimality was extended accordingly. It was shown that not only clitics lack the option of adjunction to a maximal projection in order to escape a barrier, but also elements that are moved into an A-specifier, i.e. subjects in passives and raising constructions. These elements can, just like clitics, escape the barrier by moving the latter vacuously into the specifier of an L-marked category; thus, an interesting generalization is captured. In the next chapter, clitic movement over a clause boundary, so-called clitic climbing, will be discussed, and it will be argued that the mechanisms developed in this chapter can handle the relevant facts.

Notes

1. The relevant definitions from Rizzi (1990: 7) read as follows:

   (i) **Relativized Minimality**

   X α-governs Y only if there is no Z, such that
   a. Z is a typical potential α-governor for Y,
   b. Z c-commands Y and does not c-command X

   (ii) a. Z is a typical potential antecedent governor for Y, Y in an A-chain = Z is an A specifier c-commanding Y
   b. Z is a typical potential antecedent governor for Y, Y in an A-bar chain = Z is an A-bar specifier c-commanding Y
   c. Z is a typical potential antecedent governor for Y, Y in an X^0-chain = Z is a head c-commanding Y

2. The verb is forced to move, in order to avoid orphan inflectional endings, which are not licensed at s-structure. The distinction between bound and free inflectional morphemes is parametrized (Ouhalla 1991).

3. In line with proposals by Chomsky (1986) and Rosen (1989) it will be assumed that the heads in the extended projection of the verb contain event theta-roles, which allow L-marking of their complements after the incorporation of the verb. An alternative account for the transparency of these complements would be their headlessness after verb incorporation.

4. A comparable contrast for English can be found in Pesetsky's (1981) discussion of parasitic gaps:

   (i) *The book that I reviewed *t* without knowing that the first chapter of *e* had been deleted

   (ii) The book that I reviewed *t* without knowing which chapter of *e* had been deleted

   This contrast can be explained in terms similar to the Spanish example: once the subject has been moved to a position that is indirectly L-marked, it loses its barrierhood, and allows the empty operator associated with the parasitic gap to move into a position where it is 0-subjacent to the foot of the chain of

the licensing A-bar movement. Adjunction to the argument subject is prohibited.

5. These examples have the additional advantage that the 'aboutness' reading which has been used against the cases of extraction from wh-moved subjects from a complement clause of *saber* (cf. Sternefeld 1991) is much harder to obtain with a quantifier like *cuántos* than with a PP.

6. Examples where such movement has taken place have the strong ungrammaticality associated with ECP violations, not the weaker one that is associated with subjacency violations.

7. This observation can be demonstrated with so-called *wat-voor* split in Dutch. It is well known that this phenomenon can never take place from subject position, cf. (ii) below (Den Besten 1981). This observation holds even for derived subjects which originate from d-structure object position (iii)-(iv), as the following examples indicate:

(i) Wat$_i$ heb jij gisteren [t_i voor boeken] gelezen
what have you yesterday for books read

(ii) *Wat$_i$ hebben [t_i voor mensen] die boeken gelezen
what have for people those books read

(iii) *Wat$_i$ zijn [t_i voor boeken] gelezen door de kinderen
what are for books read by the children

(iv) *Wat$_i$ komen [t_i voor boeken] aan
what arrive for books PRT

Examples (iii) and (iv) can be made licit by insertion of a dummy subject *er*, which indicates that the derived subject does not occupy the opaque specifier of IP.

(v) Wat$_i$ zijn er [t_i voor boeken] gelezen
what are there for books read

(vi) Wat$_i$ komen er [t_i voor boeken] aan
what arrive there for books PRT

8. Notice that this derivation goes against constraints on transformations such as the Raising Principle of Wexler & Culicover (1980), which prevents material

dominated by a node which has been raised from being affected by a subsequent transformation (cf. also the so-called Freezing Constraint).

9. Depending on whether one assumes that the underlying position of the subject is the actual specifier of VP, or some position taking VP as its complement (cf. discussion in preceding chapter), the specifier of VP becomes a candidate for a landing site for vacuous movement.

10. This way of analyzing the data precludes an interpretation of Chomsky's (1986) Vacuous Movement Hypothesis along the lines of Pierce (1992), who assumes that overt evidence for s-structure movement consists of permutations in word order; under the analysis proposed here, more indirect evidence, such as cliticization in certain contexts, is relevant for s-structure movement.

11. Under this perspective, specifier positions will have to be present at d-structure, in order to act as landing site for a substituting element at s-structure, contrary to Chomsky's (1986: 4) conjecture that "choice of X' is forced when there is a[n overt] specifier, otherwise optional". This entails that a version of rigid minimality (Chomsky 1986) must be replaced by a version of Relativized Minimality (Rizzi 1990); the former would by definition block movement out of a maximal projection, over an intermediate projection, whereas the latter only does so if a potential antecedent intervenes between the source and landing positions. The VP-internal subject hypothesis (Kitagawa 1986, Koopman & Sportiche 1988, Contreras 1992, among others) also entails the presence of non-filled specifier positions at d-structure.

12. Consider a structure like the following, where both YP and ZP are barriers, and XP is L-marked by W:

    (i) $W\ [_{XP}\ X\ [_{YP}\ Y\ [_{ZP}\ Z\ \ldots\ ]]]$

    Voiding barrierhood of ZP by movement of ZP into the specifier of YP, which subsequently moves into the specifier of the L-marked XP, can be ruled out under the assumption that the indirect L-marking via specifier-head agreement is not transitive: it only affects the highest specifier, not some element embedded in it.

    Movement of ZP into the specifier of XP in one swoop, on the other hand, is ruled out, because it would cross YP, which prevents the trace of ZP from being properly governed by its antecedent.

13. This assumption can act as a restriction on the scope of this type of vacuous movement: only the specifiers of TP and CP would be available as landing sites for vacuous movement of a barrier.

14. In case the wh-element is moved prior to vacuous movement of the barrier, all its intermediate traces will be either included or adjoined to the barrier, or to the left of it; any other configuration, leaving traces to the right of the landing site of the barrier, would be ruled out under some version of Relativized Minimality. Notice that such a configuration is not ruled out a priori.

    If vacuous movement is extended to rendering barriers transparent for A-bar moved elements in general, Relativized Minimality will rule the relevant configurations out, as required, due to the fact that the potential antecedent will be included in or adjoined to the barrier that is moved, and hence be a closer governor in the relevant sense for the element that is moved over it.

15. One of the facts that is brought to bear on the issue of the dissociation between clitic and verb, is that in earlier stages of French and in some contemporary dialects, adverbial material can sometimes occur between the clitic and the verb; this construction has a highly archaic flavor (cf. also Miller (1991: 174).

    (i) Ces personnages qu'on voit prendre la parole et ne la plus quitter
    These people whom one sees start to speak and never stop [= take the speech and not leave it again]

16. Independent of whether AGR would lower at s-structure and raise at LF in these cases (in line with Chomsky's 1991 conjectures for English), the clitic can never attach to AGR itself at s-structure.

17. If the copula is infinitival, it is forced to raise all the way to AGR, because otherwise there would be no specifier position available for AP: the specifier of TP is not L-marked unless the verb has raised all the way to AGR. A different state of affairs holds when the specifier of VP is available as a landing site for the barrier AP. There is some empirical evidence in favor of this conjecture:

    (i) Il faut ne pas leur être fidèle
    one must NEG not them be faithful

(ii) Il faut ne leur être pas fidèle
one must NEG them be not faithful

As these sentences indicate, raising of the verb can (as in (ii)), but need not necessarily (as in (i)) go all the way up to AGR, for the clitic to escape the AP. In case a non-copular verb is involved, the verb is not forced to raise to AGR by similar reasoning; the verb can attach to T, and subsequently the clitic can attach to this complex, leaving the non-barrier AP.

18. There are very few adverbials that do seem to be more restricted to certain positions in a linear string (cf. Pollock 1989); these are, however, all VP-adverbials and hence not relevant for the discussion at hand: the maximal projections that are vacuously moved are extended projections of VP, so that these adverbials are moved along in any event.

19. It is important in this respect to notice that in cases of clitic climbing out of complements of perception verbs, an accusative subject blocks climbing of the embedded object clitic:

(i) Jean l'a entendu les réciter
Jean him has heard them recite

(ii) *Jean les l'a entendu réciter
Jean them him has heard recite

If indeed the only way for the embedded subject to receive case is to move through the specifier of the embedded AGRP as a maximal projection, this position will no longer be available for vacuous movement that is needed to allow the object clitic to climb (cf. discussion in chapter 3). This provides independent evidence for the approach taken here with respect to past participle agreement.

20. In the example with long distance verb focussing, the moved verb skips the matrix INFL, and moves right into C, in accordance with Relativized Minimality. It does skip the embedded C, though; this can be accounted for in terms of vacuous movement of the VP to the specifier of the embedded CP (cf. chapter 3).

21. Instances of wh-movement of the subject in Kru require a resumptive pronoun in subject position for similar reasons:

(i) àlÓ$_i$ Ò$_i$/*e_i yÉ̀mÒ yé là
who he saw you PRT WH
'Who saw you?' (Koopman 1984: 145)

The difference between elements that land in COMP (Koopman is not assuming generalized X-bar in the main body of her book) and elements that land in INFL is that the latter can, but the former cannot, percolate their index to the host category. Thus, antecedents in COMP cannot bind their traces.

22. The order in multiple-clitic clusters will not be discussed in this study. Arguably, there are no purely syntactic solutions to this problem, in view of the fact that closely related languages and dialects order their clitics differently in clusters, without there being any evidence for a radically different d-structure. Consider the following examples:

(i) Jean le lui dit très souvent
Jean it him says very often

(ii) Gianni glie-lo dice molto spesso
Gianni him it says very often

Bonet (1991) sketches a morpho-phonological approach to the cluster problem for a number of Romance dialects, which is more principled than the older template approach (Perlmutter 1971).

23. Tense in terms of Pollock (1989), but Agreement in terms of the structure adopted in chapter 1.

24. Notice that this considerably weakens the generalization that A-movement is substitution and A-bar movement is adjunction (Deprez 1992).

25. This might be one reason why, across languages, verb raising in infinitival clauses is more bounded than in finite clauses. As in the rest of this study, the term *verb raising* is used in the sense of Chomsky (1991); it is not to be confused with the phenomenon found in continental Germanic, whereby a verb from an embedded infinitival clause forms a unit with the verb of the next clause up (cf. Evers 1975).

26. Adjunction to an A-element is not excluded under this scenario; in contrast to maximal projections, heads do not receive a thematic role (cf. Baker 1988), and therefore, no invisibility with respect to theta-marking arises (cf.

Chomsky 1986: 16).

27. These subject pronouns, unlike their Modern French counterparts, are clearly not clitical in nature; this can be seen from the fact that they can be topicalized, i.e. they are not restricted to head positions, as regular clitics (cf. Adams 1987, Foulet 1982). In the examples given, the (b)-sentence involves topicalization of the subject, under an analysis which takes imperatives to uniformly involve V-to-C.

28. C can be taken to be the head where the illocutionary force resides, which needs to be lexicalized in order to be licensed (cf. Holmberg & Platzack 1989 for similar considerations with respect to the obligatory nature of verb second in Germanic).

29. Negative imperatives exhibit the order clitic-verb, just like regular instances of cliticization; this can be explained under the assumption that negation needs a verbal host. It can never reach the verb when the latter is in C, because the trace in AGR creates a minimality barrier, just like the clitic which is adjoined to that head position, both being instances of A-bar binding, as is the moved NEG itself. Therefore, all elements are forced to remain in AGR, because that is the highest functional head where NEG can find the appropriate verbal licenser without excorporating.

    C can lower onto AGR in these instances, and subsequently raise again at LF, in order to avoid a violation of binding theory (cf. Chomsky 1991); this option is not used in positive imperatives, because it is not forced there, a less costly strategy being available. This is one more instance of the close interaction between negation and clitics.

30. The rules that could establish the right order would have quite awkward properties in a principles and parameters type framework. Subcategorization features on the clitic would have to be complicated significantly. Moreover, the language acquisition data discussed above would not receive a satisfactory account under such a scenario (cf. also discussion in chapter 5).

31. In the analysis of positive imperatives presented here, the string of heads that is moved is exhaustively dominated by one node in the syntactic representation, unlike the analysis proposed by Rooryck (1992), in which the element moved does not constitute a syntactic unit. Due to the fact that in that analysis the clitic attaches to the verb as the first step in the derivation, prior to verb raising, excorporation is forced, which moreover moves a non-constituent complex head, an undesirable result.

32. Notice that under the assumption that P does not L-mark its complement, even AGRP creates a barrier; consequently, the X^0 operator and the foot of the clitic chain violate even the stronger 1-subjacency. Under Chomsky's (1986) assumptions, IP does not create a barrier inherently; verb raising voids the barriers it passes.

    There is even a difference between French and Italian, under the more elaborate clause structure adopted here: in French, the verb raises only to T, leaving three barriers to intervene between the X^0 operator and the foot of the clitic chain. In Italian only two barriers intervene, due to the fact that here the verb can raise all the way to AGR. No incorporation of P into the matrix verb can be of help (via the GTC).

33. Under the assumption that the first step in cliticization processes involves movement of the maximal projection containing the clitic to a case-marked position (see chapter 3), two distinct chains are involved, and hence no problem arises with the HCC:

    (i) ... clitic_i ... $[_{DP}\ t_i\ ]_j$ ... t_j ...

    This derivation does not give rise to a complex chain in illicit parasitic gap constructions where the clitic acts as licenser of the parasitic gap.

34. This reasoning holds under the assumptions of Chomsky (1986), but not under the assumptions adopted in this study (cf. also Rizzi 1990).

35. The same conclusion holds for the Homogeneous Chain Condition, for obvious reasons.

36. Chomsky (1986) does not assume the internal subject hypothesis, which would solve this coindexation problem, since the subject would originate in the deepest embedded VP. Under this hypothesis, the AGRP associated with the participle main verb needs to be voided of its barrierhood, though, in order for the subject to raise to its s-structure position (cf. discussion below).

37. Moreover, modals are generally assumed to be base-generated in inflection, making co-indexation with the lower verbs and the object position even more unexpected.

38. Notice that this instance of vacuous movement is still clause-bound.

39. Another partial parallel between clitic and elements moved by NP-movement is that both can trigger past participle agreement; with unaccusative subjects, this type of agreement shows up, just as with clitic objects, as the following cases from Italian illustrate:

(i) Luisa è uscit-a
Luisa is left-AGR

(ii) Luisa la ha apert-a
Luisa it-F has opened-AGR

Chapter 3

Clitic Climbing

3.1 Kayne's generalization: clitic climbing and null subjects

In this chapter, a number of syntactic factors that are relevant for the parametrization of clitic climbing, the attachment of a clitic to a main verb that does not select for it, will be discussed. It is important to notice at this point that the syntactic factors that will be discussed provide necessary, but not sufficient, conditions to license clitic climbing. Besides these purely syntactic requirements, which determine whether a certain language has a way to allow the clitic to escape the lower clause in principle, there are lexical factors that determine which subset of matrix or intermediate verbs allows the actual movement to take place. Neither of these two types of factors suffices on its own: the syntactic conditions fail to explain why it is only a subset of control verbs and ECM verbs that actually allow clitic climbing, and the lexical conditions do not account for systematic differences between languages.

In a survey of Romance languages and dialects, Kayne (1989, class lectures 1987) has

observed a correlation between the existence of clitic climbing in a language and a positive setting of the null subject parameter. This pattern is exemplified in the following sentences.

(1) a. * Jean les veut voir
Jean them wants to see
b. * *pro* voit les garçons
sees the boys

(2) a. Gianni li vuole vedere
Gianni them wants to see
b. *pro* vede i ragazzi
sees the boys

Whereas Italian allows both clitic climbing and null subjects, French lacks both these options.[1] The correlation is not perfect, though, in the sense that it is uni-directional: if a language has clitic climbing, it must allow null subjects, but not necessarily the other way around. In class lectures, Kayne has suggested that some Northern Italian dialects do seem to have null subjects, while lacking clitic climbing.[2] This means that of the four logically possible configurations, only one, viz. (d), is ruled out under Kayne's generalization:

(3)

	null subjects	clitic climbing
a	+	+
b	+	-
c	-	-
d	-	+

Kayne explains this pattern in terms of the strength of INFL. In some languages, INFL is strong enough to formally license null subjects (cf. Rizzi 1986) and abstractly L-mark the VP barrier, whereas in others it is too weak to perform either of these tasks (or just the latter).

Clitics, being heads in terms of X-bar theory do not have the option of adjoining to the VP in order to circumvent its barrierhood, under standard well-formedness conditions on phrase-structure configurations. Consequently, the only way for the clitic to escape the VP barrier is to rely on some independent mechanism. One option would be for the verb to raise to INFL, thereby lexicalizing the latter, enabling it to L-mark VP. In that case, the clitic cannot move past the verb, assuming the locality restrictions discussed in the previous chapter: IP is a barrier for antecedent government, and in a more elaborate clause structure either AGRP or both TP and AGRP are, depending upon the distance over which an infinitival verb raises. Here arises a problem for Kayne: on the one hand, he explicitly adopts Chomsky's thesis that INFL and its projections are defective in terms of their ability to create a barrier; but on the other, he has to prevent the clitic from moving directly from its base position over INFL and IP into COMP, after the verb has lexicalized INFL. The only way to prevent this from happening is to adopt a strong version of the Head Movement Constraint, which was shown in chapter 1 to be far too rigid a constraint on clitic movement. Since French infinitival verbs have the option of raising to INFL, hence lexicalizing it and L-marking VP, the contrast between Italian and French in terms of clitic climbing would not receive an explanation, unless strong HMC is adopted. But this is in contradiction with Kayne's assumption that in Italian, verb raising is not a prerequisite for clitic climbing, since that implies the clitic must have skipped the verb that selects its maximal projection, violating the HMC. Under Kayne's conjectures, the clitic cannot be allowed to raise to INFL and lexicalize it itself; under that scenario, the difference between French and Italian in terms of clitic climbing would also remain unexplained.

Nor can the clitic adjoin to the V-INFL complex and then move on, leaving the verb behind; this derivation would violate Baker's (1988: 73) prohibition against traces that are not exhaustively dominated by an X^0, and it would still force the clitic to move past IP, under the assumptions laid out in the preceding chapter. Therefore, the clitic can never escape the lower clause under this scenario.

The alternative mechanism that is at work in languages that do allow clitic climbing, is that INFL L-marks VP in some abstract sense, voiding its barrierhood and thereby clearing the way for the clitic to move into INFL; this combination then moves up to the matrix clause, via empty intermediate head positions, as exemplified in the following schema:[3]

(4) clitic+C+I+V $[_{CP}$ Spec $[_{C'}$ *t"* $[_{IP}$ NP $[_{I'}$ *t'* $[_{VP}$ V *t* ...

This way of analyzing the facts still leaves the occurrence of null subjects in the absence of clitic climbing unexplained. Apparently, a distinction must be made between necessary and sufficient conditions: a strong INFL is a necessary, but not a sufficient, condition for licensing clitic climbing. In the dialects exemplified by the configuration in (3b), the sufficient condition is not met. The fact that in the languages that do allow clitic climbing, it is only with a subset of control verbs and ECM verbs that this phenomenon can be attested, which, moreover, is not exactly the same for all relevant languages, indicates that this is a reasonable assumption (see also introduction to this section): some additional mechanism plays a role. Alternatively, the relevant distinction can be phrased in terms of a three-way distinction in the strength of INFL, whereby only the strongest INFL is capable of L-marking its complement and licensing a null subject; the second strongest can only license null subjects; and the weakest cannot perform either of these tasks. It is not quite obvious how such a distinction can be generalized, though; moreover, under such an analysis, it is not clear whether the phenomena observed by

Kayne really constitute a correlation: from that perspective, the cooccurrence of phenomena could just as well be an artifact, due to distinct features of INFL.[4]

Kayne's generalization is suspect in a number of other ways. The core of the notion of L-marking, namely that the theta-governing head be lexical, is considerably weakened under his analysis.

(5) Where α is a *lexical category*, α L-marks β iff β agrees with the head of γ that is θ-governed by α (Chomsky 1986: 24, italics MH)

This is even stranger in view of the fact that INFL and its projections are considered to be defective categories in the version of the barriers framework that Kayne is adopting. This defective nature, i.e. INFL's inability to create barriers, goes against its ability to L-mark its complements in some languages, without being lexicalized.[5]

One more problem for Kayne's generalization is that it can be shown that Italian infinitivals do not remain in their base position; unlike their French counterparts, they must raise to AGR (cf. remarks in chapter 1), so that they end up in the position preceding both the negative adverb and regular adverbs, as illustrated in the following examples. The first pair of sentences shows that only one verb can move out of the VP into a position preceding the negative adverb *più*; the second pair shows that parallel behavior can be observed with infinitival verbs.

(6) a. Gianni non mangia più
Gianni NEG eats more
b. Gianni non ha più mangiato
Gianni NEG has more eaten

(7) a. per non mangiare più
for NEG to eat more
b. per non avere più mangiato
for NEG to have more eaten

This state of affairs creates another paradox for Kayne's proposal. One possibility is that the verb raises to INFL before the clitic moves, thus prohibiting the clitic from moving over INFL, under the strong HMC. Alternatively, the clitic is moved prior to the verb; in that case, subsequent movement of the clitic will force movement of the INFL, due to Baker's constraint against excorporation. This process would only leave a trace for the verb[6] to raise to, an *ad hoc* option.[7] Another HMC violation is forced in sentences that contain a negation, since here both the verb and the clitic must move over this head, for the reasons discussed in previous chapters.

Besides the above, highly theoretical considerations, there are empirical observations which strongly argue against Kayne's analysis; these involve the correctness of his generalization. First, there is a stage in the development of French, broadly the seventeenth century, during which clitic climbing is still a robust phenomenon, while null subjects in tensed clauses are completely impossible. The following examples illustrate clitic climbing:

(8) a. Il ne les pouvoit souldre
he NEG them could to make drunk
b. Il le vouloit tuer
he him wanted to kill

This configuration corresponds to (3d) above, the only illicit combination in terms of Kayne's generalization. It is unclear from the perspective of Kayne's analysis how French can have developed from a language that allowed both clitic climbing and null subjects (Old French) to a language that allows neither (Modern French), through such

a hybrid stage, if both phenomena are linked to the same parameter. Notice that if some other, extraneous factor is crucially involved in licensing of clitic climbing as a sufficient condition, the generalization becomes contentless. Apparently, this mysterious condition can explain the facts on its own; the behavior of INFL is not relevant, and the cooccurrence of the phenomena accidental. An account which assumes a three-way strength distinction for INFL would predict the opposite configuration in an intermediate stage, viz. the one found in some Northern Italian dialects: null subjects in the absence of clitic climbing, and can thus be discarded on the basis of the above data.

Second, the same pattern -- clitic climbing in the absence of null subjects -- can also be found in typologically unrelated languages, like those of the Kru family, spoken in Ivory Coast and Liberia. Some examples from Bete are given here:

(9) a. Wá kÉ-bÓ zībià pī kà mī ā`
they FUT-WH fish prepare COMP leave WH
'Will they go prepare the fish?'

b. Wá kUà-bÓ pī kà mī ā`
they FUT+CL-WH prepare COMP leave WH
'Will they go prepare it?'

(Koopman 1984: 56)

(10) * *pro* yī dú lÚ mī
(they) FUT village towards leave
'They will go towards the village'

These facts strongly argue against the universality of Kayne's generalization. These problematic facts from the historical development of French and from Kru will be discussed in the remainder of this chapter, where an alternative explanation for clitic climbing will be proposed.

3.2 Clitic climbing in Romance

In the preceding section, it was shown that it is very doubtful whether the difference within the Romance languages that is responsible for their ability to have clitic climbing is the same one that relates to the licensing of null subjects. Another difference between French and Italian, which has already been discussed above, involves the distance over which infinitival verbs raise: whereas finite verbs all raise to AGR in both languages, infinitival verbs in French cannot raise beyond T, while those in Italian raise to AGR, like their finite counterparts. On the basis of the close interaction between verb movement and clitic movement that was laid out in the preceding chapter, whereby the verb clears the way for the clitic to raise all the way to AGR by voiding intermediate barriers, such a close interaction would ideally be expected to exist in cases of clitic climbing, too; otherwise an interesting generalization would be missed. The difference between Italian and French with respect to clitic climbing can indeed be explained in these terms: in Italian, the clitic raises to AGR, thereby voiding barrierhood of VP and TP. This leaves AGRP as the only barrier between the matrix V (or, more precisely, the matrix AGR, to which the corresponding verb has raised) on the one hand, and the clitic on the other. The embedded CP is not a barrier, since it is lexically theta-governed by the matrix verb.

(11) $V\ [_{CP}\ Spec\ [_{C'}\ C\ [_{AGRP}\ NP\ [_{AGR'}\ V+T+AGR\ [_{TP}\ Spec\ [_{T'}\ t'\ [_{VP}\ t\ clitic\ \ldots$

The same mechanism that was invoked to void the barrier of the AGRP that is associated with the past participle can be of help here: the only barrier between the clitic and its s-structure position can be vacuously moved into the specifier of an L-marked maximal projection, i.e. CP. After this movement, no barrier is left anymore and the clitic is free to move to the matrix AGR in one big swoop, without violating the ECP.[8]

For French, the situation is slightly different. Here, the infinitival verb optionally raises to T, leaving at least two barriers between the clitic and its s-structure host, viz. TP and AGRP. Vacuous movement thus cannot be of help: TP cannot be moved further up than the specifier of AGRP, which is not L-marked, so that TP remains a barrier, but it cannot cross AGRP, without inducing an ECP violation. The AGRP can move into the specifier of CP, but that only voids its own barrierhood; TP remains a barrier under that scenario. A combination of these movement operations does not help, because the L-marking of a specifier is not a transitive property: V can only L-mark the elements in the specifier of CP, not more deeply embedded ones. Consequently, there will always be one barrier between the clitic and its matrix host in French, prohibiting clitic climbing, in accordance with the facts.[9] Some independent evidence in favor of these conjectures will be discussed in the following section.

There is an exception to this generalization, though: French causative verbs do allow clitic climbing. This property can be linked up to the status of causative complements; as has been argued in the literature, these complements do not have full clausal status: they cannot contain wh-phrases at their left edge, whereas regular infinitival clauses can,[10] and they cannot contain a negation, which is also generally possible in infinitival complement clauses (cf. Pijnenburg 1991). I will follow Pijnenburg,[11] in assuming that causative verbs select for a TP, whose head in turn selects for a VP; this way, there is no barrier intervening between the matrix host and the clitic.

(12) CAUS $[_{TP}$ Spec $[_{T'}$ T $[_{VP}$ V clitic ...

The TP complement is lexically theta-governed, and thus voided of barrierhood; the VP is voided of barrierhood by raising of V to T, or alternatively, by vacuous movement of the VP to the specifier of TP.[12] The clitic can subsequently move up to the matrix AGR-position, which acts as its host, after raising of the causative verb itself. Notice that

the intervention of adverbials cannot be taken as evidence against such an analysis: the adverbs can appear both in the embedded and matrix VPs.

(13) a. Le gouvernement a l'intention de faire souvent chanter La Marseillaise aux étudiants
The government has the intention to have the students sing La Marseillaise often

b. Le gouvernement a l'intention de la faire souvent chanter aux étudiants

c. faire+T [$_{VP}$ souvent [$_{VP}$ *t* [$_{TP}$ spec [$_{T'}$ chant+T ...

As noted by Pijnenburg (1991: 114), 'the differences between the upstairs and the downstairs reading are very subtle, if existing at all.'[13] This holds even more strongly under a derivation where the embedded VP is vacuously moved, since under that scenario, the higher segment of VP is arguably the one that is being moved. This perspective on causative constructions converges nicely with the traditional view, which holds that V'-fronting takes place, leaving the embedded subject behind (Kayne 1975, Rouveret & Vergnaud 1980).

Another context in French, where clitic climbing is allowed, and must even take place obligatorily in some contexts, is from complements of ECM-verbs; the same facts hold in Italian, not surprisingly.

(14) a. * Jean a entendu [le réciter les poèmes]
Jean has heard him recite the poems

b. Jean l'a entendu [*t* réciter les poèmes]
Jean him has heard recite the poems

(15) a. * Ho visto pianger-li
I have seen cry-them

b. Li ho visti piangere
them I have seen cry

Like causative verbs, ECM-verbs do not select a full-fledged clause, but a reduced AGRP: the embedded subject receives accusative case from the matrix verb, because the infinitival AGR cannot assign nominative to it.[14] Consequently, no barrier can intervene between these two elements; AGRP is transparent because it is selected by the matrix verb, so that the clitic can escape the subject position of the embedded clause. Climbing of the clitic is obligatory, because it must attach to the highest functional head it can reach without violating the ECP. The optionality of clitic climbing in some languages, which seems to go against this generalization, will be discussed below.

Besides climbing of the embedded accusative subject, climbing of the embedded accusative object is allowed also, but the latter possibility exists only if the embedded subject is dative. If the embedded subject is accusative, the object can never climb, but must cliticize onto the embedded verb:

(16) a. Jean a entendu Paul les réciter
Jean has heard Paul them recite
b. Jean l'a entendu les réciter
Jean him has heard them recite

(17) a. * Jean les a entendu Paul réciter
Jean them has heard Paul recite
b. * Jean le les a entendu réciter
Jean it them has heard recite

If the embedded subject bears the accusative, its maximal projection must have passed through a position where it is governed by the matrix verb, viz. the specifier of AGRP, in order to receive that case. This means that this position is no longer available for vacuous movement of the TP-barrier, since that would make the trace of the subject irrecoverable at LF.[15] Thus, it is predicted that the embedded object can only climb when the embedded subject does not raise to the specifier of AGRP, but instead receives dative case (or oblique case) in post-VP position, leaving the specifier of AGRP available

as a landing site for vacuous movement of the TP. This prediction is borne out, as the following facts show:

(18) a. Jean les a entendu [réciter *t* à/par Paul][16]
Jean them has heard recite by Paul
b. Jean les lui a entendu [réciter *t t*]
Jean them him has heard recite[17]

As predicted, the embedded object can optionally cliticize onto the matrix verb if the embedded subject bears the dative (or oblique) case. If the verb does not raise to T (which is optional), both TP and VP retain their barrierhood, so that vacuous movement of TP is not sufficient for the clitic to escape the clause. If, on the other hand, the verb does raise to T, barrierhood of VP is voided, and vacuous movement of TP to the specifier of AGRP clears the way for the clitic to climb to the matrix verb, as in the instances discussed above.

(19) a. Jean a entendu les réciter par Paul
Jean has heard them recite by Paul
b. Jean les a entendu réciter par Paul
Jean them has heard recite by Paul

Thus, the conjectures from this and the preceding chapter make the right predictions about the intricate patterns of cliticization in ECM-constructions. In particular, the instances where the object clitic and the subject clitic attach to two different verbs, which are easily accounted for under this analysis, are problematic for approaches that assume VP-complementation in combination with obligatory attachment of clitics to a functional head (cf. Rosen 1989) or restructuring[18] (Rizzi 1982). Moreover, an analysis that assumes that V-to-C is a necessary condition for clitic climbing (Ouhalla 1989) gets into trouble with ECM-complements, since verb raising in French infinitivals is restricted to T. The facts discussed here thus provide additional evidence for the analysis proposed.[19]

Consider now the following subject-object asymmetry in the tensed counterpart of the ECM-construction:

(20) a. Je le vois qui vient
I him see that+AGR comes
b. * Je l'ai vu que Paul a frappé
I him have seen that Paul has hit

As the first example indicates, the embedded subject clitic must have received its case in the specifier of the embedded CP and not in the specifier of the embedded AGRP, even though nominative case can be assigned in the tensed clause, as the following nominative counterpart of the above (a)-sentence indicates:

(21) Je vois qu'il vient
I see that he comes

There are two indications for case assignment to the specifier of the embedded CP: first, the clitic bears accusative case, not nominative, indicating that case has not been assigned until the clitic was in the government domain of the matrix verb, i.e. in the specifier of CP; this is on a par with the (a)-sentence below, in which the wh-phrase has moved through the specifier of the embedded CP and picked up its case there, in contrast with the subject in the (b)-sentence below, which remains in the specifier of AGRP, and hence does not receive any case (cf. Kayne 1984):

(22) a. Quel garçon crois-tu être le plus intelligent
which boy believe you to be the most intelligent
b. * Je crois Jean être le plus intelligent
I believe Jean to be the most intelligent

Second, the complementizer of the embedded CP (*qui*) agrees with the subject, which

according to Rizzi's (1990) account can be taken as an indication that the latter has moved through the specifier of CP (cf. also Chung & McCloskey 1987 for similar reasoning on the basis of Irish). In both cases, the embedded verb raises all the way to the finite AGR, so that barrierhood of VP and TP is voided automatically; barrierhood of CP is voided by the matrix verb. This means that another mechanism must be at work to void barrierhood of AGRP: notice that nothing prevents the clitic maximal projection from adjoining to AGRP, in order to escape the latter's barrierhood.[20] As was argued above, the maximal projection that is headed by the clitic must receive case, before the clitic can move out of it. Adjunction does not create an improper binding configuration, as it would do in normal cases, because the next landing site is an A-bar position, too.[21]

The illicit example of clitic climbing of the embedded object in (b) above can now be readily explained. The object clitic receives case either in its base position under government or in the specifier of AGR_OP, under specifier-head agreement (cf. Mahajan 1992), so that all subsequent movement is head movement. This implies that barrierhood of AGRP cannot be escaped via adjunction, and, moreover, that the embedded complementizer, being an A-bar head, creates an additional minimality barrier.[22]

Another point that needs some comment involves the observation that clitic climbing is blocked by overt complementizers in finite constructions in which the specifier of the embedded CP cannot be assigned exceptional case; the complementizer, being a head, cannot create a minimality barrier for movement of the AGRP, a maximal projection, in the Relativized Minimality framework, but nonetheless, the clitic must be prohibited from moving up to the matrix clause. On the other hand, Kayne (1989, cf. Rizzi 1982) cites a case involving a wh-constituent, which does not block climbing (b).

(23) a. * Gianni li vuole che Maria veda
Gianni them wants that Maria see-SUBJ
b. Non ti saprei che dire
NEG you I know what to say

Instances of clitic climbing over an overt wh-phrase are generally fairly marginal at best (cf. Rizzi 1982 for Italian, and Moore 1991 for Spanish). The acceptability of the result depends on a number of factors: (a) choice of clitic: with accusatives, the results deteriorate, as well as with datives that are not second person; (b) the occurrence of negation in the matrix clause: in absence of such negation, the result is illicit;[23] and (c) the choice of matrix verb: apparently only *sapere* and *saber* (to know) allow for this construction, in Italian and Spanish, respectively (cf. Moore 1991). These observations further support the analysis presented here: if the specifier of CP is filled, the result gets worse. Exceptional cases like the above can be explained in terms of an analysis of wh-movement proposed by Deprez (1990, 1992), whereby wh-movement of objects is uniformly analyzed as an instance of adjunction: under this approach, substitution is an option that is only open to locally moved subjects; objects and non-locally moved subjects end up in a position adjoined to CP. Under a derivation along those lines, the specifier of the embedded CP in the (b)-sentence above would still be available as a landing site for vacuous movement of AGRP and the right linear order between wh-phrase and remnants of the AGRP would be obtained. The explanation for the apparent inability of the clitic to move over a complementizer will be taken up below.

In instances where there is more than one clitic associated with the infinitival verb, there are some restrictions on clitic climbing: either all clitics climb, or they all stay behind; climbing of a subset of the clitics is prohibited (cf. Aissen & Perlmutter 1983), as indicated in the following examples from Spanish:

(24) a. Quiero mostrár-te-los
(I) want to show you them
b. * Te quiero mostrar-los
you (I) want to show them
c. * Los quiero mostrar-te
them (I) want to show you
d. Te los quiero mostrar
you them (I) want to show

These facts are easily explained under the A-bar analysis of clitic movement: the base position of a climbing clitic in (b) and (c) would be shut off from its antecedent by a minimality barrier, created by the other clitic, which occupies a c-commanding A-bar position that in turn is c-commanded by the antecedent clitic and thus constitutes a closer governor of the same type in terms of Relativized Minimality. A similar situation does not occur when both clitics climb: they attach to the same host, and thus don't interfere with each other's government domains. Schematically, the relevant contexts are as follows:

(25) a. * clitic_i+AGR ...AGR+clitic_j ... t_i t_j ...
b. clitic_i+clitic_j+AGR ... t_i t_j ...

Aissen & Perlmutter (1983) discuss some cases with multiple clitics, not associated with the same verb, which behave exactly as expected: either clitic is allowed to climb or cliticize, as long as it does not cross the base position of the other clitic (cf. Pesetsky's (1981) Path Containment Condition).

(26) a. Quiero permitir-te hacer-lo
(I) want to allow you to do it
b. Quiero permitír-te-lo hacer
(I) want to permit you it to do
c. Te lo quiero permitir hacer
you it (I) want to allow to do
d. ... clitic$_i$+clitic$_j$ ... t_i ... t_j

In these cases, the antecedents for both clitic traces occupy the same position, so that one cannot create a minimality barrier for the other. The clitic associated with the intermediate verb is also allowed to climb on its own, while the most deeply embedded clitic does not leave its clause:

(27) a. Te quiero permitir hacer-lo
you (I) want to allow to do it
b. clitic$_i$ .... t_i ... clitic$_j$ ... t_j ...

The only situation that is not allowed to occur under the Relativized Minimality approach taken here is where the clitic attaching to the intermediate verb creates a minimality barrier for the trace of the clitic that is associated with that verb at d-structure.[24]

(28) a. * Te quiero permitir-lo hacer
you (I) want to allow it to do
b. clitic$_i$ ... clitic$_j$ ...t_i ... t_j ...

The lexical feature which determines whether a certain verb allows clitic climbing from its complement clause or not, mentioned at the beginning of this chapter, can now be made more precise: via head-head selection, the matrix verb selects a clause, which is headed by a C which bears a certain feature, say [+μ], or does not; in case this feature is present, a generalized version of the Wh-Criterion (May 1985, Rizzi 1991) requires the specifier of C to be appropriately filled, i.e. with a non-quantified operator, AGRP.

When the μ-feature is absent on the C, the specifier may not be occupied by an operator, due to the bi-uniqueness of the criterion.[25]

(29) **μ-criterion**

a. A μ-operator must be in a specifier-head relation with an $X^0[+\mu]$

b. An $X^0[+\mu]$ must be in a specifier-head relation with a μ-operator[26]

A subset of verbs will thus (optionally) select for a $[+\mu]$ complementizer, which in turn is required to stand in a specifier-head relation with an operator of the appropriate type; if a verb does not select a complementizer with this special property, the specifier of its complement is not accessible to non-quantified moved material that binds a variable.

This formalism also allows an account for the obligatoriness or optionality of clitic climbing across languages:[27] in languages that allow the clitic to remain downstairs, while it has the option to climb, like Spanish, the selection for the μ-feature is optional; in languages that do not allow the clitic to remain downstairs, the μ-feature is selected obligatorily, and thus forces vacuous movement of AGRP in order to satisfy the μ-criterion; this in turn automatically leads to clitic climbing, since the clitic must attach to the highest possible functional head it can reach without crossing barriers, and vacuous movement voids all barriers between the clitic and the AGR-node of the next clause up. This gives rise to the following configurations:

(30)

μ-feature	clitic climbing
optional	optional
obligatory	obligatory
absent	absent

If a language does have μ-selecting verbs, clitic climbing still only occurs if the embedded verb raises high enough to void all barriers except AGRP; if it does not, as in French infinitives, AGRP still has to raise, in order to satisfy the second clause of the μ-criterion, but the clitic must remain downstairs, because it is still dominated by TP, a barrier. The advantage of this approach is that the syntactic and lexical restrictions on clitic climbing interact closely, even though they remain completely distinct. Neither restriction is a necessary and sufficient condition on its own; they need to work in parallel -- one cannot be reduced to the other, so that the absence or presence of clitic climbing is not completely reduced to a lexical idiosyncrasy, but is still co-determined by syntactic factors.

The blocking effect of an overt complementizer still needs to be accounted for. The complementizer itself is not capable of creating a minimality barrier for the AGRP, and it is irrelevant for the clitic-trace relations within AGRP. The crucial factor in this context seems to be specifier-head agreement: the specifier of a complementizer can be occupied by AGRP, but only if the complementizer requires such an element via the μ-criterion, which makes movement of AGRP obligatory.[28] If no μ-feature is present on a lexical C, movement of AGRP cannot be licensed, and thus does not occur; hence, clitic climbing does not occur.[29]

3.3 A diachronic perspective

The development of French offers a good test case for the conjectures of the preceding section. French developed from a language that had both clitic climbing and null subjects to a language that has neither, through an intermediate state that only had clitic climbing, contrary to what Kayne's generalization predicts.

(31)

	null subjects	clitic climbing
Old French	+	+
17 century French	-	+
Modern French	-	-

The conjecture that the distance over which the verb raises constrains the freedom of the clitic makes some interesting predictions about this development: the syntax of verbs is expected to have developed in tandem with that of clitic climbing; more particularly, in older stages of French, the verb is expected to raise further than in comparative constructions in Modern French.

Old French was a verb-second language, comparable to continental Germanic nowadays: the verb raised to COMP and at most one constituent was topicalized to the specifier of CP, as the following examples indicate:[30]

(32) a. Tant ont Francois chevauchié
long have the French ridden
b. Messe e matines ad li reis escultet
mass and morning prayers has the king heard

(Adams 1987: 2)

This phenomenon is almost completely absent in Modern French; here, only a phenomenon which has been dubbed *residual verb-second* is found: V-to-C is still found in certain questions, as well as in positive imperatives (cf. Rizzi 1991, Haverkort & Weissenborn 1991, cf. also discussion in chapter 2).

(33) a. Qui a-t-elle rencontré?
who has she met
b. Chantez-la souvent!
sing it often

Whereas the phenomenon was also found in embedded contexts in Old French (Adams 1987),[31] in Modern French, it is only allowed in root contexts. Null subjects were another robust feature of the grammar of Old French, just like clitic climbing (Adams 1987, Vance 1989; Foulet 1982, de Kok 1985, 1987):

(34) a. Si demora *pro* einsi laienz trois jors
so remained (he) thus therein three days
b. Einsi partirent *pro* del port de Venise
thus departed (they) from the port of Venice
(Adams 1987: 1-2)

(35) a. Je la voudrai marier bien
I her would marry gladly
b. Mes ele ne la pot veoir
but they NEG her could see
(Foulet 1982: 135)

The prediction is that verb raising in infinitival clauses should move the verb up as high as AGR, as in Modern Italian. This seems to be corroborated by the facts, as shown by the following examples, where the verb precedes the negative adverb, which, according to the null hypothesis, indicates the d-structure position of the negation.

(36) a. Pour ce, mes chières filles, est-il bon de ne se haster point
b. Car elle commencea à ne le chercher pas
because she started to NEG it look for not
(de Kok 1985: 335)

The next stage in the development, seventeenth century French, is extremely important

for the hypothesis developed here: it shows that clitic climbing is not directly correlated with licensing of null subjects. The former phenomenon is still very productive (Galet 1971):

(37) a. Il ne les povoit souldre
he NEG them could make drunk
b. Il le vouloit tuer
he him wanted to kill
c. S'il le faut ainsi dire
if one it must thus say

The prediction is that the infinitival verb, unlike its Modern French counterpart, but like its Old French one, raises all the way to AGR, preceding the negative adverb at s-structure; once again, the facts corroborate the hypothesis:

(38) a. Je seroit bien content de ne l'y voir point
I would be very happy to NEG him here see not
b. De ne se commettre jamais avec un poëte
to NEG oneself commit ever to a poet

(de Kok 1985: 335)

As de Kok (1985: 336) notes in her detailed study of pronouns, the modern order, where the infinitival verb follows the negative adverb, starts showing up more and more frequently during the seventeenth century; from the perspective taken here, this is the factor leading to the demise of clitic climbing.

Thus, the facts from diachronic development of French provide evidence in favor of the hypothesis that the crucial factor determining whether a language can have clitic climbing or not is the distance over which the verb raises: only if the verb raises high enough, leaving at most one barrier between the clitic and its host, can the clitic climb.[32]

Although Kayne's generalization does not hold, one can argue for an indirect relation between clitic climbing and null subjects. Adams (1987) argues that the distance over which the verb moves in Old French (more particularly, the loss of verb second) is crucial for the licensing of null subjects; if this is on the right track, it explains why Kayne's generalization presented itself: the position where the verb ends up is important for licensing of null subjects and it is important -- but independently so -- for the licensing of clitic climbing.

3.4 Long-distance NP-movement

One feature that has been associated with languages that allow clitic climbing is so-called long-distance NP-movement: the object of the embedded verb can end up as the subject of the matrix clause in impersonal *si/se* constructions (cf. Rizzi 1982, Aissen & Perlmutter 1983). Usually, NP-movement is clause-bound (39b), but with verbs that trigger clitic climbing, the NP can cross clause boundaries (39c-d).[33]

(39) a. Mario la comincerà a scrivere domani
Mario it will begin to write tomorrow
b. Molte case si costruiscono in questa città
many houses are being constructed in this city
c. Finalmente si comincerà a costruire le nuove case
Finally they will begin to build the new houses
d. Finalmente le nuove case si cominceranno a costruire

This correlation can be accounted for under the analysis of clitic climbing proposed here. Recall the account that was sketched for NP-movement in the previous chapter. There it was argued that the clitic and the object NP in raising and passive constructions use the same mechanism to escape their barrier, viz. vacuous movement of the barrier into an L-marked position; this hypothesis entails a strong parallelism in behavior between

clitics and NPs, and it predicts that whenever the clitic is capable of escaping its barrier, an NP should be, too.

One of the prerequisites for this type of long-distance NP-movement to take place is that no barriers intervene between the NP and its trace. Parallel to clitic climbing constructions, the verb of the embedded clause raises to AGR, passing through T, voiding barrierhood of VP and TP, respectively. The barrierhood of AGRP can be voided by vacuous movement, when that is allowed to take place by the μ-criterion. Another requirement that must be fulfilled is that the trace of the NP does not violate principle A of the binding theory:

(40) a. Principle A
An anaphor must be bound in its governing category

b. α is a governing category for β iff α is the minimal category containing β, a governor of β, and a SUBJECT accessible to β

There is a well known contrast between finite and non-finite clauses, in that AGR in the former can, but AGR in the latter cannot, constitute a SUBJECT in terms of the binding theory, as illustrated by the following contrasts (Chomsky 1985: 168, Everaert 1988).

(41) a. * They$_i$ think that each other$_i$/themselves$_i$ will win the race
b. They$_i$ hope for each other$_i$/themselves$_i$ to win the race
c. They$_i$ expected each other$_i$/themselves$_i$ to win the race
d. * They$_i$ expected that each other$_i$/themselves$_i$ would win the race

This implies that the intermediate trace of the moving embedded object in the specifier of the embedded AGRP is not restricted to finding an antecedent in the same clause: the AGR-node associated with this non-finite clause does not constitute a SUBJECT accessible to it; only the higher AGR associated with the finite T does. Consequently,

binding theory requirements do not block movement across the lower AGRP, as long as the latter's barrierhood is voided and movement does take place through the embedded specifier of AGRP.[34] Thus, the lower trace is bound in its governing category, the lower AGRP, by the intermediate trace in the specifier; the intermediate trace in turn is bound in its governing category, the higher AGRP, by the moved NP.

(42) $[_{\text{AGRP}}\ \text{NP}_i\ [\ \text{AGR}_{[+\text{SUBJECT}]} \ldots [_{\text{AGRP}}\ t_i\ [\ \text{AGR}_{[-\text{SUBJECT}]} \ldots\ t_i \ldots$

Thus, long-distance object movement and clitic movement are both prohibited from crossing the clause boundary with main verbs that do not select a $[+\mu]$ complementizer; in this case, AGRP constitutes a barrier that cannot be crossed via adjunction, and that cannot be vacuously moved into the specifier of an L-marked category.

(43) a. * Mario la otterrà di vendere domani
Mario it will get permission to sell tomorrow
b. Finalmente si otterrà di costruire le nuove case
finally they will get permission to build the new houses
c. * Finalmente le nuove case si otterranno di costruire

As is predicted by the above account, Old French, unlike its modern counterpart, allowed the object to cross a clause boundary in the impersonal construction (Pearce 1990).[35]

(44) a. Car amors ne se puet celer
for love NEG SE can hide
b. Porter se volt el braz senéstre
to wear SE wants on the arm left

As noted by Pearce (1990), even though the object is not phonologically realized in the (b)-example, it must have occupied a subject position, in view of the fact that Old French did not have null objects. Under a vacuous movement analysis, these facts are accounted

for at no extra cost.[36]

3.5 Clitic climbing in Kru

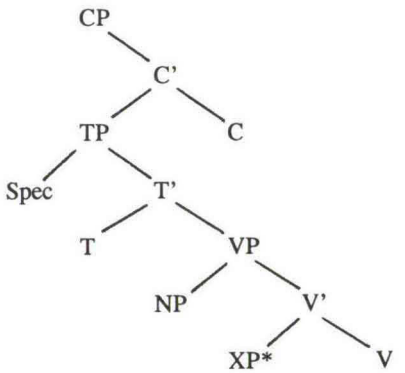
The Kru languages, which are spoken in Ivory Coast and Liberia, belong to the Niger-Congo family.[37] They are fairly consistently head final.[38] Only T is on a left branch, due to a Case-adjacency requirement (Stowell 1981): the canonical direction of government is leftward, and no lexical material may intervene between the subject NP and its case assigning INFL (Koopman 1984: 29), as the following examples from Vata illustrate; these restrictions explain the deviant behavior of IP in terms of headedness.

(45) a. ṅ ká fáfá sa̱ká yÓ-Ò nyE̱
I FUT quickly rice child-DEF give
'I will quickly give rice to the child'

b. * ṅ fáfá ká sa̱ká yÒ-Ò nyE̱
I quickly FUT rice child-DEF give
'I will quickly give rice to the child'

A simple CP in Kru thus has the following structure:

(46)



The observation of Koopman (1984: 72 ff.) that Kru INFL does not contain agreement, just tense information, can be translated in the present framework by leaving out the AGR-projection in clause structure. There are some observations which support this impoverished structure. First, verbs do not regularly agree with their subject, as the following paradigm shows:

(47) ń / ǹ / Ò / à / à / wà gbā
I you he we you they speak
(Koopman 1984: 73)

Second, there are some considerations with respect to binding of anaphora, which support the AGR-less structure (cf. Koopman 1984: 78). Vata, one of the Kru languages, has anaphoric wh-pronouns, which need to be bound from an A-position which in turn is bound from an A-bar position, i.e. they are resumptive pronouns.

(48) àlÓ$_i$ Ò$_i$ gūgū nā Ò$_{i/*j}$ nÍ yà là
who he-RES thinks PRT he-WH NEG healthy WH
(Koopman 1984: 78)

These constructions show that in Vata AGR, unlike lexical subjects, never defines an opaque domain for binding. If AGR is absent from the embedded clause, the embedded subject can find an antecedent one clause up.

As discussed at length in Koopman (1984), Kru languages exhibit verb raising to T, both in main and embedded clauses that are finite (a-b); in infintival clauses, the verb remains in its VP-internal position (c). The verb also fails to move if there is already an auxiliary occupying the T-node (b). Consider the following examples:

(49) a. à lì sàká
we ate rice
'We ate rice'

b. à lā sàká lī
we PERF rice eat
'We have eaten rice'

c. Ǹ nɪ́-kā [$_{CP}$ yÒ-Ó sàká nyÈ kā] mlī
I FUT-COND child-DEF rice give COMP leave
'I will go give the child rice'

(Koopman 1984: 42, 45)

Not all the Kru languages have pronominal clitics; Vata does not, but Bete, another Eastern Kru language, does. The following examples illustrate the phenomenon in simple clauses; the effect of cliticization is generally quite subtle (change of a vowel on the host, or change of tone), and the process does involve morphological incorporation, unlike Romance.

(50) a. Wá yá yù là
they PERF child call
'They have called the child'

b. Wà yÒ là
they PERF+CL call
'They have called it'

(51) a. Ò yī sìkà lī
he FUT rice eat
'He will eat rice'

b. Ò yì lī
he FUT+CL eat
'He will eat it'

(Sportiche 1983b: 305)

In Bete, clitic climbing occurs with a subset of control verbs and raising verbs, including the following motion verbs and inchoatives.

(52) a. mī leave
b. yī come
c. cì start
d. bĪÈ finish
e. báà arrive

Clitic climbing from an infinitival clause is illustrated by the following pairs:

(53) a. Wà kÉ-bÓ [zībià pī kà] mĪ ā`
they FUT-WH fish prepare COMP leave WH
'Will they go prepare the fish?'

b. Wà kUá-bÓ [pī kà] mĪ ā`
they FUT+CL-WH prepare COMP leave WH
'Will they go prepare it?'

(54) a. Wà nÍ [zībià pī kÒ] bĪÈ
they NEG fish prepare COMP finish
'They haven't finished preparing the fish'

b. Wà nUá [pī kÒ] bĪÈ[39]
they NEG+CL prepare COMP finish
'They haven't finished preparing it'

(Koopman 1984: 56-57)

(55) a. à nÍ [glìmÒ lī̀ kÒ] bĪÈ
we NEG agouti eat COMP finish
'We haven't finished eating the agouti'

b. à nÚ [lī̀ kÒ] bĪÈ
we NEG+CL eat COMP finish
'We haven't finished eating it'

(56) a. Ó̰ kâ zìká [yṵ̀ lá̰ kà] mĪ̀
he FUT tomorrow child call COMP leave
'He will leave tomorrow to call the child'

b. Ó̰ kÔ zìká [lá̰ kà] mĪ̀
he FUT+CL tomorrow call COMP leave
'He will leave tomorrow to call it'

(Sportiche 1983b: 307)

The lack of null subjects in tensed clauses, which was mentioned above as evidence against the correctness of Kayne's generalization for these languages, is not the only problem that arises. As is evident from the above examples, the complementizer is obligatorily present in infinitival complements in Kru; unlike Romance, the unmarked case in Kru is that the clitic can climb over these functional heads. Notice that these two problems are in principle logically independent: an explanation for the transparency of VP will still leave the apparent minimality barrier unexplained, and vice versa.

These examples thus also argue against two other types of analyses that have been proposed in the literature. Rizzi's (1982) restructuring analysis would have to assume that the complementizer can become part of the complex verb. Another instance of clitic climbing that is hard to accomodate under restructuring is the following, where the main clause verb raises, leaving the rest of the verbal unit behind in a non-adjacent position.[40]

(57) Wá̰ mUá gŌdÙgÒdÙ pĪà kà
they go+CL always buy COMP
'They always go to buy them'

(Koopman 1984: 58)

The appearance of overt complementizers also argues against an account which takes complements of verbs that allow clitic climbing to be VPs, not full-fledged clauses (Moore 1991). Ouhalla's (1989) analysis of clitic climbing as V-to-C, followed by incorporation of the clitic in the matrix verb, fails in these languages: COMP is not available as a landing site for the verb when it is overtly realized (cf. Den Besten's (1989) generalization with respect to verb second in Germanic). Moreover, as was argued above, infinitives do not raise.

An analysis of clitic climbing as it was developed in the preceding sections cannot account for the Kru phenomena either, at first sight: the verb in infinitival clauses does not raise at all, but remains in VP. Thus, VP remains a barrier, unless some extraneous mechanism can void its barrierhood; the null hypothesis is that TP, on a par with its counterpart AGRP in Italian, is a barrier, too. Movement of the TP to the specifier of CP can explain why the clitic can skip the COMP, but the transparency of VP is still unaccounted for; there is no place for the VP to move to in order to get L-marked, without crossing clause boundaries. There is a peculiarity about complementizers in these languages, and in Niger-Congo more generally, that can help make sense of this state of affairs: complementizers in these languages have developed from verbal elements, and most of them are still recognizable as such. They are homophonous with a verb, usually a form of 'to say' (Heine & Reh 1984, Heine, Claudi & Hünnemeyer 1991). Koopman (1984: 94 ff.) discusses this feature at some length for the complementizer *na*, showing that this element, although it acts as a complementizer, still is a verb, having a defective, irregular paradigm, and only allowing a bare tensed, extraposed clause to follow it. For the complementizer *ka/kO* similar observations hold; these elements are homophonous with verbal forms, as argued by Marchese (1978: 136). One natural assumption would thus be that they have partly retained verbal characteristics, like assignment of thematic roles to their complements; even though they are much impoverished semantically, they can still formally L-mark the TP they select, thus voiding its barrierhood. This

immediately clears the way for movement of the VP barrier to the specifier of CP. Thus, even though the verb does not raise, an escape mechanism for another head is available. Alternatively, as has been observed by Koopman (p.c.), the complementizer can be assumed to have incorporated into the matrix verb, maybe because its verbal features need to be licensed; there is some tonal evidence supporting this alternative solution. The alternative would have the same effect, though: barrierhood of TP can be voided, due to the fact that the government domain of the matrix verb is extended over that of the incorporated complementizer, an effect of the GTC.

There are considerations that support this analysis. The VP movement, which is vacuous in this case because of the phonologically empty PRO subject of the embedded clause, is sometimes overt, such as in causative constructions; these are formed with the aid of the causative suffix *-a*, which selects an embedded clause with an overt subject at d-structure; thus they are underlyingly bi-clausal (cf. Baker 1988). Consider the following example:

(58) Yuá yī Kòfí Bànò slŪ-à
children FUT Kofi Bano show (=V+CAUS)

a. 'The children will show Bano to Kofi'
b. 'The children will show Kofi to Bano'

(Sportiche 1983b: 297)

The ambiguity of this sentence can easily be explained under the analysis sketched above. The reading in (a) is derived via head movement of the embedded verb *slU* to the causative marker, satisfying the latter's morphological subcategorization matrix.[41] Reading (b) arises as a consequence of VP-movement; the d-structure of this reading is as follows:[42]

(59) $[_{TP}$ yua $[_{T'}$ T $[_{VP}$ $[_{CP}$ Spec $[_{TP}$ Bano $[_{T'}$ T $[_{VP}$ Kofi slU]]]] a yi ...

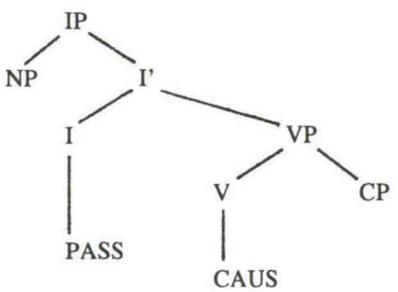
The VP *Kofi slU* moves up to the specifier of the embedded CP and ends up in a position preceding and c-commanding the overt subject; subsequently, the embedded verb must incorporate into the matrix causative morpheme, as under the (a)-reading, for morphological reasons, so that only the object precedes the subject at s-structure. In examples where the subject and object can be distinguished more easily, the effects of VP-movement can be observed even more clearly.[43]

(60) a. Wá yī yuá sìkà lī-à
they FUT children rice eat-CAUS
'They will make the children eat rice'

b. Wá yī sìkà yuá lī-à
they FUT rice children eat-CAUS
'They will make the children eat rice'

Another observation that supports the above analysis involves passivized causatives; as argued by Baker (1988) in his discussion of Chichewa causatives, a subtype of these constructions involves VP-movement. Two different dialects of Chichewa allow two distinct passives of morphological causatives; the underlying structure in both dialects is the same.

(61)



In one dialect, the subject of the complement clause surfaces as matrix subject, in the other, the object does, as shown in the following examples, respectively:

(62) a. Mnyamata a-na-kolol-ets-edw-a chimanga ndi Catherine
boy SP-PAST-harvest-CAUS-PASS-ASP corn by Catherine
'The boy was made to harvest the corn by Catherine'
b. Ana a-na-meny-ets-edw-a kwa buluzi (ndi anyani)
children SP-PAST-hit-CAUS-PASS-ASP to lizards by baboons
'The children were made to be hit by the lizard (by the baboons)'[44]

Whereas the first sentence can be derived via successive head movement of the embedded verb and subsequent movement of the embedded subject-NP, the second example is derived via VP-movement to the specifier of the embedded CP, and subsequent movement of the embedded verb; in the latter case, the embedded object becomes accessible for NP-movement, since neither the VP nor the embedded CP forms a barrier, and there is no accessible subject blocking NP-movement. The second type of passivized causative also occurs in the Kru languages, and analogous to Baker's analysis, provides theory-internal evidence for VP-movement.

(63) Zībià yá pī-Ò
fish PERF prepare-CAUS-PASS
'The fish was made to be prepared (by someone)'

In this example, the causative marker *-a* and the passive marker *-O* merge as a consequence of a regular phonological mechanism (Sportiche 1983b).[45] The properties of clitic climbing in Kru can thus be explained without any extra cost: similar mechanisms are at work as in the Romance languages; the only difference being that the role of the verb is less prominent in Kru, the complementizer having taken over this function, either by L-marking TP itself, or by incorporating into the matrix verb.

In this chapter, it was shown that the combination of the distance over which an infinitival verb raises on the one hand and the option of vacuous movement of AGRP on the other can account for the occurrence of clitic climbing: for this phenomenon to occur,

the verb selecting the clitic has to raise to a position where it is separated from the verb one clause higher up by at most one barrier; that barrier can be moved into the specifier of the embedded clause, where its barrierhood is voided. Vacuous movement of AGRP is constrained by features on C, which are selected for by a subset of matrix verbs that subcategorize for a CP complement: via specifier-head agreement these features end up in the specifier of CP and thus require that position to be filled by AGRP; if no such feature is present, movement is not forced, and hence does not take place. The clitic adjoins to the highest functional head it can reach without crossing a barrier, i.e. obeying the ECP.

The loss of clitic climbing in the history of French was shown to go hand in hand with a reduction of the distance over which infinitival verbs raise in that language, as expected on the basis of the above considerations. NP-movement, which was argued in the preceding chapter to use the same strategy as clitics to escape a barrier, was shown to participate in long-distance movement with exactly the verbs that trigger clitic climbing, a result that is expected under the parallel treatment of these two phenomena. Clitic climbing in Kru, although different in details, can be accounted for in terms of the same abstract mechanism of vacuous movement of a barrier.

Notes

1. French only allows clitic climbing from the complements of causative verbs and perception verbs (see discussion below).

2. Under the assumption that Modern French is a pro-drop language (Roberge 1990, Pierce 1992), this language also belongs to configuration (3b): null subjects in the absence of clitic climbing.

3. This mechanism partly eliminates the disadvantage that was discussed at the end of chapter 1 in connection with Ouhalla's account of clitic movement; the head that is moved up during every step of the derivation (except the first one) is of the appropriate type for its host. The problem remains, however, in the sense that the only lexical element incorporated is the clitic, which arguably is not of the right type to count for L-marking.

4. Notice also that under the assumption of a more elaborate clause structure, Kayne's generalization can no longer be considered to be a true correlation; the two phenomena would be handled by two different heads: AGR licenses null subjects under government (Koopman 1984, Rizzi 1986) and T must somehow void barrierhood of its VP complement. The resulting cooccurrence would thus be an artifact of two phenomena that are in principle independent. This is not a problem internal to Kayne's analysis, though.

5. Kayne does consider the generalized barrierhood hypothesis, under which IP is an inherent barrier, to which wh-phrases can adjoin (cf. Van de Koot 1990, Frampton 1990).

6. The foot of a chain is generally assumed to be the only element that retains the relevant features.

7. Similar considerations hold when one adopts the more elaborate clause structure discussed in chapter 1, but even more strongly so: here raising of the verb would involve attachment to a trace left by head movement of the clitic twice, viz. T and AGR.

8. Under this analysis, no distinction needs to be made between distinct complement clause types; these can uniformly be taken to be CPs. This is an advantage in view of the reductionist strategy of the lexicon, which assumes that thematic information is structurally realized in a canonical fashion (cf.

Grimshaw 1991; van Hout 1992 even takes a stronger stand and reduces thematic information in turn to aspectual information); such a reductionist strategy is incompatible with too rich an array of possible structural realizations.

9. It is important to note at this point that the use of vacuous movement is clause-bound. This is needed, in order to prevent TP from moving out of the vacuously fronted AGRP, after the latter has lost its barrier status in the specifier of the embedded CP, by moving into the specifier of the matrix TP, for instance. All instances of vacuous movement discussed in this study do obey this constraint, which can be attributed to the avoidance of a tense clash in the matrix clause; notice that this property of Kayne's analysis, where the embedded INFL incorporates into the matrix INFL, has been held against it (cf. Rosen 1989).

   Notice in this connection that instances of unbounded movement have an alternative strategy to escape a barrier: adjunction; thus, these elements can be moved prior to AGRP-fronting, which does not have the option of adjunction, because that would not break down its barrier status, but only help constituting the right government configuration for the ECP.

10. As is pointed out by Pijnenburg (1991), this might be an idiosyncratic property of these verbs.

11. It should be noted here that Pijnenburg (1991) follows Pollock (1989) in assuming that AGRP is hierarchically lower than TP; thus in his analysis, it is actually AGRP which acts as complement to the causative verb. Nothing hinges on this distinction for the analysis developed here, however.

12. It is relevant to notice in this connection that the subject does not surface in this position anyway, cf. the fact that it receives dative, not nominative case.

13. Similar facts from Dutch are quoted from Bennis & Hoekstra (1989), where a superficially embedded adverbial must be interpreted as having matrix scope:

    (i) Ik hoor de baby niet ademen
        I hear the baby not breathe
        I don't hear the baby breathe

14. The reader is referred to de Geest (1973) for a summary of the arguments in favor of the subject status of the accusative element.

15. Recall that this vacuous movement was clause-bound; therefore, the specifier of AGRP is the only position that can act as a landing site.

16. Both *à* and *par* can occur in this construction, but for a number of speakers, *par* seems to be the preferred option when the object clitic has climbed to the ECM verb. If the object remains downstairs, both options are equally preferred:

    (i) Jean a entendu les réciter à/par Paul
    Jean has heard them recite by Paul

17. Obviously, the dative subject clitic cannot remain in the embedded clause when the accusative clitic has climbed, under the assumption that clitics attach to the highest functional head available; all barriers have been voided for the accusative clitic, so the way is clear for the dative clitic: it can, and so must, climb to the higher AGR. Moreover, such a configuration, with one clitic downstairs and one upstairs, would create a minimality violation.

    (i) *Jean les a entendu lui réciter
    Jean them has heard him recite

    Similar considerations hold for climbing of the dative, while the accusative remains downstairs.

    (ii) *Jean lui a entendu les réciter
    Jean him has heard them recite

    Causatives obey a similar constraint; Goodall (1984) gives some examples where there is a split between the clitics in Spanish causatives, but in these cases the non-split variant is definitely better. See also the discussion of multiple clitic climbing in Spanish below (cf. also Aissen & Perlmutter 1983).

18. There are a number of additional arguments against restructuring. First, in languages that have enclitics with infinitival verbs, the string that results after clitic climbing is V-cl-V, whereby the clitic is sandwiched in between the two verbs that have been restructured:

    (i) Quiero poder-lo ver
    (I) want to be able him to see

    Second, the projection principle is violated at the level of representation where restructuring has applied. And third, the word order in Mexican

Spanish, where the subject of the matrix verb can appear post-verbally, and thus appears in between the two verbs that have been restructured, is left unexplained (cf. LaPolla 1988):

(ii) Lo quiere Maria tomar
it wants Maria to drink

19. Note that these facts provide additional evidence against Kayne's (1989) analysis. Kayne assumes that the clitic moves via successive head positions, as a consequence of which the inflection of the higher and lower clause get co-indexed. This is taken as an account for the fact that only subject control verbs allow clitic climbing: the subjects of both clauses have to have the same reference, in order to be associated with INFLs which bear the same index. Perception verbs argue against this perspective, since here the higher and lower subject are by definition disjoint in reference, unless anaphoric. Rosen (1989) discusses additional arguments against moving the lower INFL into the higher one: lexical integrity of both INFLs will be violated, the lower clause ends up without its INFL (and that INFL's event role) and the upper clause contains two INFLs with possibly conflicting information.

20. As the relative position of the complementizer with respect to the rest of the embedded clause indicates, no vacuous movement of AGRP has taken place here (cf. also discussion below on the blocking effect of overt complementizers on clitic climbing).

21. Alternatively, one might argue that the agreeing complementizer is somehow strong enough to void barrierhood of its complement, whereas its non-agreeing counterpart is not; this would account for the subject-object asymmetry, too.

22. An indication that the embedded complementizer is indeed a problem in terms of minimality in these cases, is provided by the following example:

(i) Qui_i les_j-a-t-il entendu t_i réciter t_j

In examples like these it must be assumed that the wh-phrase is assigned a default nominative case (the default case is not universally nominative, cf. McCloskey 1986, who argues that the default case for Celtic is accusative); no complementizer blocks movement of the clitic out of the embedded clause in the above example.

23. A similar restriction in terms of the presence of negation seems to hold for Old and Middle French clitic climbing over a wh-phrase, as illustrated with the following example (cf. Martineau 1991):

    (i) Mais ele ne lor sot dire qui ele estoit
    but she NEG them was able to tell who she was

24. Notice that another factor crucially interacts with minimality in these multiple clitic cases, viz. the requirement that clitics attach to the highest available functional head with agreement features. Once the relevant barriers are voided, the clitic *must* climb; consequently, once a lower clitic climbs, and hence no barriers intervene between its d-structure position and its landing site, all clitics it passes on its way are forced to climb along, because no barrier intervenes for them either. If they would stay behind, they would by definition not attach to the highest functional head available:

    (i) clitic_j+AGR ... clitic_i+AGR ... t_i ...t_j ...

    The French ECM-construction with dative and accusative clitics provides examples of similar configurations (see above).

25. Some generalized version of this criterion is needed independently; Rizzi (1991) suggest an extension over negation, too.

26. The operator obviously obtains its status as it moves, but this holds more generally for operators, so that it is not problematic for the first clause of the μ-criterion.

27. The obligatory nature of clitic climbing is not expected under Kayne's (1989) account; under his analysis, the clitic should be able to climb in any clause that has a strong INFL (i.e. that allows for a null subject to be licensed), and moreover, climbing should always be optional (cf. also Rosen 1989).

28. Kayne's conjectures with respect to the few cases found in Spanish and Italian where a clitic does climb over the apparent complementizer, have to be accepted: these complementizers must be assumed not to occupy the regular COMP-node, but a head position higher up. Using a proposal by Emonds (1985), the complementizer could be assumed to head a PP, taking a CP as its complement (cf. also homophonous prepositions in Italian: *a, de*).

29. Notice that the analysis sketched in this section provides highly theory-internal evidence against Ouhalla's (1991) analysis of infinitival clauses in French, whereby the AGR-projection is absent and TP acts as highest head in the

verb's extended projection. If that were true, clitic climbing would be expected to occur in a much broader range of contexts, cf. also the remarks on Kru below (section 3.5).

30. A similar development has been noticed in the history of other Romance languages, e.g. Spanish (Fontana 1992).

31. According to Adams (1987: 117), Old French allows embedded verb-second with the same class of verbs that allows the phenomenon in Modern German.

32. Another relevant factor in the gradual loss of clitic climbing in French, which interacted with the scope of verb movement, is the class the matrix verb belongs to (cf. Martineau 1991); thus, in terms of the above analysis, certain verb classes developed from $[+\mu]$ to $[-\mu]$ in a systematic fashion.

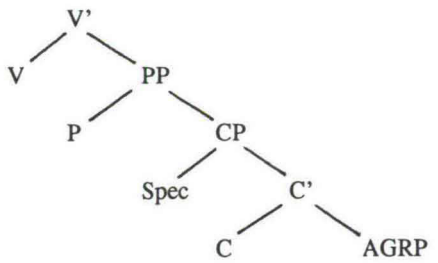
33. Baker (1988) uses similar data from Chichewa passivized causatives to argue for vacuous VP-movement. The parallel example looks as follows:

    (i) Ana a-na-meny-ets-edw-a kwa buluzi ndi anyani
    children SP-PAST-hit-CAUS-ASP to lizard by the baboons
    'The children were made to be hit by the lizard by the baboons'

    As will be shown in section 3.5 below, the same correlation between clitic climbing and long object movement also holds in Kru.

34. This analysis presupposes the correctness of Kayne's (1989) conjecture that the prepositional elements that introduce the embedded clause are not real Cs (see also Manzini 1982). The following structure can be assumed:

(i)



The complementizer can incorporate into the preposition, since no barrier intervenes between the two; due to the GTC, the government domain of C is extended over P, so that the μ-criterion can be met.

There is some evidence that the preposition and the complementizer are indeed not occupying the same position (cf. Manzini 1982, Rosen 1989). Unlike *for*, an Italian preposition can never be followed by a lexical NP in subject position. Moreover, as the following examples show, they can appear simultaneously:

(ii) Mario acconsentì a che Luigi andasse all'estero
Mario consented P that Luigi went aboard

(iii) Mario andò all'estero per-che Luigi studiasse
Mario went aboard P-that Luigi studied

Another argument Manzini (1982) brings forward for the hypothesis that the preposition is not a complementizer is related to examples like the following:

(iv) La ragazza a cui non so [che cosa pensi [di dare ...
the girl to whom (I) not know what (he) thinks to give

Under the assumption that CP is a bounding node in Italian (Rizzi 1982), movement over the CP dominating the infinitival and the next CP up would invoke a subjacency violation. Under the PP analysis, however, the specifier of PP can act as an escape hatch, so that *a cui* can move in local steps, crossing one CP at most, and hence not invoking a subjacency violation. Manzini's analysis, in which the preposition is adjoined to CP, is not allowed under the strictly endocentric X-bar theory adopted here.

Manzini also shows that the prepositions cannot be treated on a par with English *to*, in view of the fact that different matrix verbs select different prepositions; if the preposition were embedded in IP, selection would not be a local process. Moreover, the order P-C argues against such an analysis.

35. Modern French does not have an impersonal construction which is exactly parallel to the Italian and Spanish construction; French uses *on* instead of *se*.

(i) On mange bien ici
one eats well here

36. One more characteristic that has been associated with the clitic climbing construction that can receive an explanation under the proposed analysis is the fact that the embedded infinitival verb can determine the choice of the matrix auxiliary *optionally*.

(i) Lo pioggia ha/è continuata ad aumentare
the rain has/is continued to increase

Here, choice of the auxiliary *è* is determined by the embedded infinitival. As a consequence of optional vacuous movement of AGRP in these constructions, there are no barriers intervening between the matrix and the embedded verb in that case. The selectional restrictions of both verbs with respect to the choice of auxiliary can thus be realized in the same local domain; in case AGRP has been moved, the lower verb can overrule the selectional restrictions of the higher verb; otherwise, the higher verb determines the choice of auxiliary. Notice that this approach assumes s-structure checking for the right choice of auxiliary (as any derivational approach to clitic climbing must).

37. The Kru family consists of the following languages: Godie, Bete, Kouya, Neyo and Vata (Eastern Kru), Tepo, Grebo, Guere Nywabwa, Wobe, Dewoin, Klao (Western Kru), and Kuwaa (Isolate) (cf. Marchese 1988).

38. On the Kru languages, cf. Kaye 1980, Kaye, Koopman & Sportiche 1982, Koopman 1979, 1984, Marchese 1978, 1988 and Sportiche 1983a. In this section, the orthography of Koopman 1984 will be used; in a number of instances, tones needed to be added or changed.

39. Koopman gives this sentence with the question particles, unlike its non-clitic counterpart; these elements have been left out here.

40. Similar observations can be made for the above cases, where the clitic attaches to the non-adjacent auxiliary; notice, however, that these cases are on a par with the Romance instances of cliticization to a tensed verb in periphrastic tenses. This case is also problematic for an argument structure merger as proposed by Rosen (1989).

41. The overt complementizer is absent in these cases, unlike the infinitival complements.

42. The raising of the subject NP from VP-internal position is disregarded in this structure, but that is not relevant for the logic of the argument.

43. These examples also have the advantage that they don't display the properties of a lexicalized causative (Koopman, p.c.).

44. Baker (1988) does not provide the tones with the examples.

45. For some unknown reason, the adverbial *by*-phrase can never surface in these constructions in Kru (Koopman, p.c.), unlike Chichewa.

Chapter 4

Endocliticization and Affixation

4.1 Endocliticization in Portuguese

In the preceding chapters, it has been suggested a number of times that selectional restrictions of the clitic force it to adjoin to the highest functional head available to it at s-structure, without violating the ECP, not to the verb with which it seems to form a unit superficially. This requirement provides an elegant account for the relative order of clitics and verbal inflection with respect to the verb, under the additional assumption that clitics left-adjoin in the unmarked case in Romance. This generalization goes against one of the criteria that has been proposed by Pullum & Zwicky (1983: 504) to distinguish affixes from clitics, which stresses the selectional freedom of clitics, as opposed to affixes:

(1) Clitics exhibit a low degree of selection with respect to their hosts, while affixes exhibit a high degree of selection with respect to their stems[1]

There are a number of apparent counterexamples to the generalization that clitics attach to functional heads only, which seem to support Pullum & Zwicky's criterion for clitichood. One very productive class of apparent exceptions can be observed in Chichewa, where object-markers appear in a position between the agreement and tense prefixes and the verbal stem, as the following examples indicate (cf. Bresnan & Mchombo 1986, 1987):[2]

(2) a. Njûchi zi-ná-wá-lum-a
bees AGR-PAST-OM-bite-INDIC
'The bees bit them'

b. Mkángó a-ná-ú-dy-a
lion AGR-PAST-OM-eat-INDIC
'The lion ate it'

These data would be easily accounted for if the generalization that clitics attach to a functional head were weakened, and clitics were allowed to attach to lexical heads, too, in some cases; this would also be more in agreement with Pullum & Zwicky's observation. But it can easily be shown that this is not on the right track when Portuguese is taken into consideration, since in this language clitics do not uniformly appear in the same linear position with respect to the verbal inflection, as they do in Chichewa. Notice that these data go against another criterion brought forward by Pullum & Zwicky (1983: 504):

(3) Clitics can attach to material already containing clitics, but affixes cannot [i.e. clitics are external to affixes, MH]

In Portuguese, clitics can attach both pre- and post-verbally on finite verbs (Zwicky 1987). Moreover, encliticization in this language exhibits both patterns: in the unmarked case, the clitic attaches externally to the inflectional morphology (a), and in the synthetic future and conditional it attaches internally to inflection in the linear string (b):

(4) a. V + T/AGR + clitic
b. V + clitic + T/AGR (T = FUT, COND)

The following examples illustrate both patterns:

(5) a. Ela tem uma casa linda e ontem mostrou-no-la
she has a house nice and yesterday showed-us-it
b. Ele deu-nos uma boa noticia
he brought-us a good message

(6) a. Dar-me-ão eles um bom ordenado?
give-me-FUT/3P they a good salary
b. O médico pô-lo-ia são em poucos meses
the doctor make-him-COND/3S healthy in few months

The endoclitic elements[3] in Portuguese are homophonous with regular pronominal clitics, so that an analysis which takes them to represent object agreement misses a generalization.[4] The clitics do occur in a position where object agreement would be expected, following the Mirror Principle. The conjecture that in these cases, the clitic attaches to the right of the lexical head V, prior to raising of the latter to T and AGR, which end up on the same side of the verb as the clitic, will get the right linear string of morphemes, but it goes against the generalization that clitics by definition attach to a functional head, not to a lexical one, which seems to hold for the non-endoclitic elements in this language as it does in the other Romance languages.

There are other problems with this solution. The same pronominal clitics would have to attach to a functional category in unmarked cases, but to a lexical category in marked cases, without it being clear what factors determine this difference in behavior. The relevant information is stored in T, since only future and conditional trigger the marked endocliticization; the content of T would therefore have to force cliticization onto V in a subset of cases. This influence of T would thus have to extend over the VP-barrier,

since clitic movement would have to apply prior to raising of the verb to get the right order of morphemes. This is a highly unlikely state of affairs, in view of the fact that, as has been pointed out a number of times above, head movement processes are constrained in terms of government (cf. Baker 1988).

An alternative analysis is available, though, making use of the hypotheses put forth in the preceding chapters. The synthetic future and conditional have a periphrastic counterpart in Portuguese, in which the auxiliary selects an infinitival clause and optionally allows for clitic climbing to occur, as the following pair indicates:

(7) a. Como lhe hei-de resistir
how it shall-1S resist
b. Como hei-de resistir-lhe
how shall-1S resist-it

The inflectional endings of the synthetic future and conditional diachronically developed from periphrastic variants, involving an independent auxiliary (S. Anderson, p.c.); the modern language still bears traces of that stage, in that the stem to which future and conditional inflection attach is the infinitival form of the verb, indicative of verb raising of the stem prior to merger with the future or conditional morphology; the endings themselves show a strong resemblance to the endings on the auxiliary *haver* 'to have':

(8)

		future	conditional
Sg	1	levá-lo-ei	levá-lo-ia
	2	levá-lo-ás	levá-lo-ias
	3	levá-lo-á	levá-lo-ia
Pl	1	levá-lo-emos	levá-lo-íamos
	2	levá-lo-eis	levá-lo-íeis
	3	levá-lo-ão	levá-lo-iam

levar-lo 'to raise it'

(9)

		present	imperfect
Sg	1	hei	havia
	2	hás	havias
	3	há	havia
Pl	1	havemos	havíamos
	2	haveis	havíeis
	3	hão	haviam

haver 'to have'

Taking these observations seriously, the null hypothesis is that there is a minimal difference between synthetic future and conditional and their periphrastic counterparts: both involve a verb which selects an infinitival complement clause. The verb in the infinitival clause raises all the way to the AGR of its own clause, thus voiding barrierhood of VP and TP, respectively, just as in Italian.[5] The clitic can attach to the right of the infinitival, as it standardly does in Portuguese. The infinitival verb has to incorporate into the deficient synthetic future or conditional verb in the matrix clause, after the latter has raised to its AGR, in order to license it, on a par with V-incorporation in morphological causatives, as described in detail by Baker (1988); the future or conditional complex cannot survive on its own, as it is too weak. The infinitival verb attaches to the left of the main verb, since the latter must head the complex verb. Schematically, the derivation is as follows:

(10) a. ... [V + T/AGR] .... [[V + T/AGR] clitic] ...
b. ... [[[V + T/AGR] clitic]$_i$ + [V + T/AGR]] ... t_i

There are still some problems with this derivation, though. Notice that no barriers may intervene between the infinitival verb and its trace after incorporation into the matrix verbal complex, since antecedent government needs to be obeyed; this entails that CP cannot be a barrier, and that barrierhood of AGRP must have been voided somehow. The mechanism of vacuous AGRP-movement discussed in the preceding chapter can do the

job, under the assumption that the matrix verb behaves more like a main verb than an auxiliary, as can also be inferred from the fact that it selects an infinitival clause. Under that assumption, it selects a [+μ] complementizer, and the μ-criterion forces movement of AGRP.[6]

This in turn entails that there is no longer a barrier between the clitic and the main verb (or more precisely: the matrix AGR after verb raising) either, so that the clitic could climb to the matrix AGR under that scenario, and must do so under the assumption that it attaches to the highest functional head available to it. It would be forced to do so, since the matrix verb must be obligatorily selecting a [+μ] complementizer in order to force AGRP-movement, which in turn is needed to allow the infinitival verb to incorporate into the matrix verbal complex and thereby license the future or conditional morphology.[7] Thus, the highest functional head available for the clitic as a host is the matrix AGR, just as in regular cases of clitic climbing, the only distinction being that the host requires subsequent incorporation of a lexical category in order to get licensed.

A remaining problem is that clitic climbing does not necessarily give the right result; clitics can attach both pre- and post-verbally if the verb is finite in Portuguese (cf. Zwicky 1987, Postma 1990 among others).

(11) a. João me vê
João me sees
b. João vê-me
João sees-me

Thus, some constraint is needed to prevent the clitic from appearing to the right side of the matrix verb, deriving the wrong order of clitic and inflectional morphology in the linear string. One way to circumvent this problem is to make use of a suggestion by Richard Kayne (1990, 1991a), which holds that in enclitic structures in Romance the verb

raises further up than the head position to which the clitic adjoins (cf. discussion in chapter 2). Thus, the clitic adjoins to the left of AGR uniformly, and it is the verb that moves on to a c-commanding head position in finite clauses in Portuguese (cf. Postma 1990 for a V-movement account of enclitics in Portuguese, making use of the distinction between short and long verb movement). Under such an approach, movement of the matrix verb in synthetic future and conditional to a position to the left of AGR would be prevented by Relativized Minimality. If the matrix verb were to move further than AGR, it would still be able to antecedent-govern its trace, via an intermediate trace it leaves behind in AGR. Notice, however, that the infinitival verb could not move from its own AGR to the finite verb in pre-AGR position in one swoop, because then, the trace of the latter in AGR would create a minimality configuration, both instances of verb movement being A-bar movement:

(12) $V_j + V_i \ldots [_{AGR}$ clitic $[_{AGR}\ t_i\ ]]\ldots\ t_j \ldots$

Moreover, the clitic in AGR would act as closer governor, too, when present. The only option open to the matrix verb is to stay in AGR, A-bar binding its own trace; the embedded verb can now climb to the matrix AGR position, not crossing any A-bar heads, and thus obeying Relativized Minimality. The traces of all the moved heads can now be A-bar bound from the same surface position, so that neither creates a minimality configuration for the other:[8]

(13) $[_{AGR}\ V_j + \text{clitic}_k + V_i\ ] \ldots\ t_i \ldots\ t_j\ t_k \ldots$

At this point in the derivation, the whole complex in AGR could move along to a pre-AGR head position in finite clauses, without violating Relativized Minimality. Notice that the clitic will have to move along, since it is enclosed by verbal morphology on both sides; the only manner in which it could stay behind in AGR, would be via

excorporation, which is not allowed for independent reasons (Baker 1988).

In regular instances of cliticization and clitic climbing, movement of the verb to a pre-AGR head position is not problematic in terms of Relativized Minimality, due to the fact that clitic movement does not move beyond AGR, which thus cannot create a minimality configuration for the trace of the clitic.

One crucial assumption for the above analysis to work is that head movement applies bottom-up, along the lines of the following condition, thus forcing the clitic to climb prior to incorporation of the infinitival verb.

(14) Head movement applies bottom-up, whereby each maximal projection constitutes an application domain

If the clitic were to adjoin to AGR after the latter has been vacated by the two merged verbs, nothing would rule that configuration out: both verbs would bind their traces from the same A-bar position, one not creating a minimality barrier for the other. The condition that as soon as a structure is broken open, the lowest head must move first, yields the right result. Intuitively, this condition resembles the traditional condition on the cycle in syntax.

All instances of head movement discussed above obey this constraint;[9] the only cases where it is violated are cases where movement of a higher head is forced to take place before movement of a lower head, because that is the only way to void barrierhood for movement of the lower head, and therefore the only way to fulfil the latter's selectional requirements.[10] Thus, the verb must raise, prior to clitic movement, in order to clear the way for the clitic to reach an appropriate host, something the latter cannot do on its own, not being a proper lexicalizing element for the c-commanding heads T and AGR,

which subcategorize for a verb and T, respectively;[11] the clitic cannot enable functional heads to L-mark their complement, and would therefore have to move over a barrier, inducing an ECP-violation. An indication that a requirement along the above lines is on the right track is independently provided by standard cases of N-incorporation, where movement of the N does not have to cross any barriers, since it originates from an L-marked category, so that it can (and hence, must) move up to the verb, its appropriate host, before V-raising takes place (cf. Baker 1988):

(15)	a.	Wa-hi-nuhs-ahni:nu: John AOR-1S/3M-house-buy John 'I bought John's house'	(Oneida)
	b.	Wa-hi-'sereht-anvhsko PAST-3S/1O-car-steal 'He stole my car'	(Mohawk)
	c.	I?i ye-k-kar-hreks-s I T1-1S-bark-push 'I push the bark'	(Iroquoian)

In these examples, the incorporated N is internal to inflectional morphology, in accordance with the constraint on head movement formulated above; raising of the verb is not a prerequisite for the incorporated nouns to reach their host, and thus not forced to take place prior to N-incorporation. Moreover, if N-incorporation were to take place after the verb has raised to AGR, traces of V and T would create minimality barriers, under the assumption that this type of head movement is A-movement (cf. Baker 1988).

Under the analysis sketched here, endocliticization in Portuguese is only apparently an exception to the generalization that clitics attach to functional heads; the tenses that exhibit this behavior have in common that they are too weak to be licensed on their own, and need a verbal element to accomplish that. The analysis allows an elegant unification of several clitic phenomena.

4.2 Pronoun incorporation in Chichewa

Portuguese endocliticization can be analysed as an instance of clitic climbing and subsequent verb incorporation, but such an analysis is not available for cases of apparent endocliticization in constructions that are mono-clausal. Here, some other mechanism must be at work if the generalization that clitics adjoin to functional heads is to be maintained. A relevant case in point is the Chichewa object marker, illustrated in the following sentences:

(16) a. Njûchi zi-ná-lum-a *(alenje)
bees AGR-PAST-bite-INDIC hunters
'The bees bit the hunters'

b. Njûchi zi-ná-wá-lum-a (alenje)
bees AGR-PAST-OM-bite-INDIC
'The bees bit them, the hunters'

(17) a. Mkángó a-ná-dy-a *(ng'ombe)
lion AGR-PAST-eat-INDIC cattle
The lion ate the cattle'

b. Mkángó a-ná-zí-dy-a (ng'ombe)
lion AGR-PAST-OM-eat-INDIC cattle
'The lion ate them, the cattle'

(18) AGR + T + clitic + V

As these examples indicate, presence of the object marker (OM) on a transitive verb apparently renders the object NP optional, whereas the object can never be left out if no object marker is present on such a verb (cf. also Kishindo 1988). It has to be established that the object marker originates from the canonical object position, and is not an instance of object agreement, associated with its own syntactic projection (cf. Chomsky 1991) as can be found in a number of other African languages. In other words: the doubling object NP must be shown not to occupy the canonical object position, so that

complementarity in distribution between the two can be established. Bresnan & Mchombo (1986, 1987) have discussed this issue in some detail, arguing that the Chichewa object marker is an instance of pronoun incorporation, hence on a par with cliticization processes in Romance and Kru; it therefore is a relevant case for the issue at hand (for similar conclusions on other languages, see Baker & Hale 1988, 1990).[12]

Here, the main arguments of Bresnan and Mchombo in favor of complementary distribution between incorporated pronoun and full object NP will be summarized. First, if the verb does not have an object marker associated with it, the object NP must immediately follow it, whereas the subject may be reordered with respect to the VP, as indicated in the following examples:

(19)	a.		Njûchi zi-ná-lúm-á alenje bees AGR-PAST-bite-INDIC hunters 'The bees bit the hunters'	S V O
	b.		Zi-ná-lúm-á alenje njûchi	V O S
	c.	*	Alenje zi-ná-lúm-á njûchi	O V S
	d.	*	Zi-ná-lúm-á njûchi alenje	V S O
	e.	*	Njûchi alenje zi-ná-lúm-á	S O V
	f.	*	Alenje njûchi zi-ná-lúm-á	O S V

As soon as the object marker is present, though, all possible word orders are allowed, indicating that the co-occurring object NP is not occupying the canonical object position:

(20)	a.	Njûchi zi-ná-wá-lúm-á alenje bees AGR-PAST-OM-bite-INDIC hunters 'The bees bit them, the hunters'	S V O
	b.	Zi-ná-wá-lúm-á alenje njûchi	V O S
	c.	Alenje zi-ná-wá-lúm-á njûchi	O V S
	d.	Zi-ná-wá-lúm-á njûchi alenje	V S O
	e.	Njûchi alenje zi-ná-wá-lúm-á	S O V
	f.	Alenje njûchi zi-ná-wá-lúm-á	O S V

Second, the pronoun incorporation hypothesis explains the correspondence between object markers and the gender class that their NP-referent belongs to. In the following examples, the referent of the object marker belongs to noun classes 7 and 3, respectively:

(21) a. á-ná-chí-dyá
AGR-PAST-OM(7)-eat
'He ate it'

b. á-ná-ú-dyá
AGR-PAST-OM(3)-eat
'He ate it'

Third, Bresnan & Mchombo (1987) show that the same constituent cannot simultaneously be topic and focus. If the overt NP that shows up together with the clitic is a topic, hence not in canonical object position, it is predicted that it cannot be questioned in situ; this prediction is borne out:

(22) a. (Kodí) mu-ku-fún-á chiyâni?
WH 2SG-PRES-want-INDIC what
'What do you want?'

b. ?? (Kodí) mu-ku-chí-fún-á chiyâni?
WH 2S-PRES-CL-want-INDIC what
'What do you want (*it)?'

Moreover, there is some interesting tonal evidence, indicating that the apparent object does not occur in the canonical object position; in VP-final position, an underlying H-tone on the final syllable retracts to the preceding L-tone syllable, as is illustrated in the following examples.[13]

(23) a. Ndikufúná kutí áná ánga [$_{VP}$ a-piti**riz-é** phúnziro]
1S-want that children my 3P-continue-SUBJ lesson
'I want my children to continue the lesson'

b. Ndikufúná kutí [$_{VP}$ a-piti**ríz-e**] áná ánga
1SG-want that 3P-continue-SUBJ children my
'I want my children to continue'

In cases where the object marker co-occurs with an overt full NP, tonal retraction takes place, even when this NP directly follows the verb in the linear string, indicating that it is in a VP-external position, not occupying the canonical object position.[14]

(24) Ndikufúná kutí áná ánga [$_{VP}$ a-li-pítí**ríz-e**] phúnziro
1S-want that children my 3P-CL-continue-SUBJ lesson
'I want my children to continue it, the lesson'

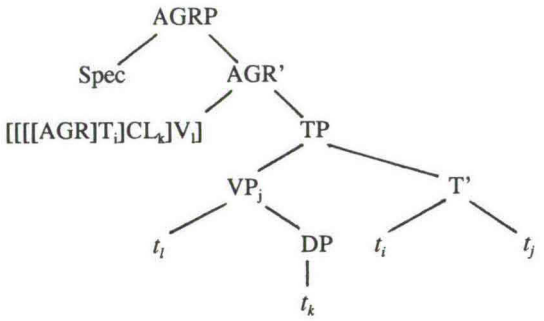
Thus, object pronouns in Chichewa incorporate into the verb from the canonical object position, ending up in a position that is internal to the tense and agreement morphology in the linear string. This conclusion is further supported by the observation that subject agreement does not show the complementary distribution that the object marker does, suggesting that something different is going on here.[15] The Chichewa facts thus present another instance of endocliticization that needs an explanation, especially since this process takes place in a mono-clausal structure, so that the clitic climbing plus verb incorporation option of Portuguese is not available. If the generalization that clitics attach to functional categories is to be maintained in its strongest form, cliticization to V, prior to raising of the latter, is no option either.

In the framework sketched above, there is another way of deriving the correct result in these cases. Recall that in order to prevent verb raising all the way to AGR in French infinitival clauses, Pollock (1989) assumes that infinitival AGR is an opaque category, blocking transmission of thematic information to the verb trace, after the verb has

substituted in AGR (see chapter 1). A minimal assumption which would force the right result in Chichewa is that T has the same property in this language. This means that the verb cannot raise into T, without the verb losing the possibility of transmitting its thematic information to its trace; the verb cannot raise to AGR in one big swoop either, since that way it would move over two barriers, viz. VP and TP, violating the ECP.

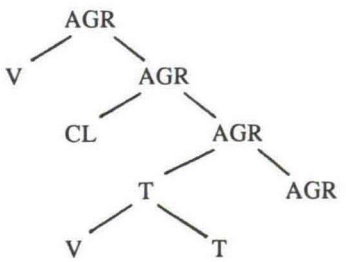
The only possibility for this structure to be 'broken open' is for T to raise to AGR, which is morphologically subcategorized for it anyway. This way, the TP barrier is voided; subsequently, the VP can move into the specifier of TP, becoming transparent via specifier-head agreement.[16] Now the structure is open for head movement. According to the bottom-up principle of head movement discussed in the preceding section, the clitic is the first element eligible for movement; it can move all the way up to the AGR-T complex, without crossing any barriers, thus satisfying its selectional requirements, while obeying the ECP. Subsequently, the verb can raise to the same node, satisfying selectional requirements of T, which have merged with those of AGR in the substitution process. The bottom-up principle thus essentially has an effect similar to that of the *linear cycle* in the seventies (cf. Zwarts 1975): a subset of transformations is applied in accordance with the requirements of the cycle, and subsequently another subset of transformations is applied in the same way.[17] Schematically, the derivation looks as follows:

(25)

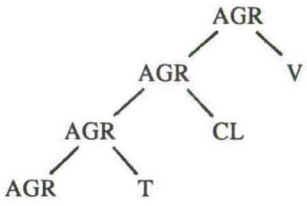


Notice that the clitic adjoins to the right in Chichewa, not to the left, as in Portuguese. The explanation for this is simple: unlike Portuguese, Chichewa morphology is left-headed: the language is generally prefixing, like most Bantu languages. Therefore, if the clitic were to adjoin to the left it would, following Kayne's (class lectures 1989) suggestions, become the head of the resulting morphological complex, blocking percolation of the selectional requirements of T and AGR. The verb would have to adjoin to the complex, instead of subsitituting, and it would not satisfy the latter's selectional requirements, leading to ungrammaticality. Thus, the different setting of the headedness parameter in Portuguese and Chichewa explains the mirror-image ordering of verb, clitic, tense and agreement in these languages.

(26) Portuguese



(27) Chichewa



The interaction between head movement and vacuous movement of maximal projections that are barriers that is used to account for these instances of endocliticization has been independently motivated in the preceding chapters. Under the assumptions made here, a close interaction between tense features and endocliticization, which was handled for Portuguese by a deficient matrix verb, follows quite straightforwardly: it is the opacity of T which forces a non-standard derivation. The case of Portuguese can fairly easily be restated in terms of opacity of T,[18] in conjunction with clitic climbing.[19]

Under the assumptions made here, a possible explanation can be offered for the fact that endocliticization is rare cross-linguistically. The forced raising of T to AGR in turn forces movement of the VP, in order to void the latter's barrierhood and hence allow verb raising and cliticization in the first place. Such a derivation is more costly than one where the verb raises to T and subsequently the V-T complex raises to AGR. This complex derivation must apply in all clauses in Chichewa, in view of the fact that the verb obligatorily raises to AGR. Thus, there may be economy considerations disfavoring such a derivation and making it a less preferred option across languages. It is thus on a par with *do*-support in English (Chomsky 1991).

The above analysis has the advantage that it allows a simple distinction between object agreement and object clitics, in line with earlier proposals by Hale (1988), even though the clitic appears internal to inflectional morphology, and thus seems to behave more on

a par with agreement morphology:[20] whereas clitics can occur optionally, but always occur in complementary distribution with an object NP in the canonical position, agreement is present obligatorily, whether an NP is present or not, because it is represented in a separate projection (Chomsky 1991). A language which exhibits regular object agreement is Makua (Stucky 1985, Bresnan & Mchombo 1987):

(28) a. Aráárima á-hó-n-líh-a mwaáná
Araarima SM-T/A-OM-feed-T/A child
'Araarima fed a child'

b. * Aráárima á-hó-líh-a mwaáná
Araarima SM-T/A-feed-T/A child
'Araarima fed a child'

Grammatical object agreement must be present in all cases, and is never optional; clitics, on the other hand, are not necessarily present: the object position can be occupied by a full NP as well. This generalization seems to work nicely for the cases at hand, but it may need further refinement as more languages are taken into consideration.

Hale (1988) has extended this pronoun incorporation analysis to agreement phenomena in Celtic languages, which show a similar complementary distribution between agreement morphology and overt NPs, as in the following sentences from Irish:[21]

(29) a. Labhraí-m
speak-1S

b. * Labhraí-m mé
speak-1S I

Interestingly, as these examples show, the phenomenon extends to subject agreement in Celtic. Cross-linguistically, this is rare, but it provides extra evidence for Hale's pronoun incorporation analysis, since this phenomenon is only attested with subjects in VSO languages, where the verb moves into C (cf. also Sproat 1985), and can thus canonically

govern the subject, allowing incorporation from the subject position. It must thus be assumed that the subject raises to the specifier of AGRP in order to receive case, prior to pronoun incorporation. Notice also, that these facts support Rizzi's (1990) conjunctive version of the ECP: antecedent government does not suffice on its own to license a trace; besides identification, formal licensing must take place.

A problem that Hale (1988) notes for his analysis can be easily solved under the assumptions made in this study; it turns out that VSO languages do not allow N-incorporation from the subject position, as the following examples from Niuean indicate, even though a pronoun should be able to escape the subject position under the pronoun incorporation analysis of agreement. The subject thus cannot be an absolute barrier for head movement.

(30) a. Fa totou he tau faiaoga e tau tohi
HAB-read ERG-PL-teacher ABS-PL-book
'(The) teachers often read books'

b. * Fa [$_V$ totou faiaoga] *t* e tau tohi
HAB-read-teacher ABS-PL-book
'Teachers often read books'

This configuration of facts can be explained in terms of the A/A-bar distinction introduced in chapter 2: the pronominal clitic adjoins to its host, creating an A-bar configuration; the intervening lexical material, other than AGR and C,[22] thus does not create a minimality barrier, since they are A-positions, and hence not potential closer governors. Under the assumption that incorporation in Baker's (1988) sense is an instance of A-movement (cf. discussion of the HMC in chapter 1), the intervening determiner (and for that matter: any intervening lexical head) will create a minimality barrier for the N, and thus induce an ECP-violation.[23] Under these assumptions, the more local character of that type of incorporation phenomena, in contrast with pronoun incorporation, is accounted for.

In this chapter, cases of apparent endocliticization in Portuguese and Chichewa were discussed; even though at first sight the resulting linear string seems to go against the generalization that clitics attach to a functional head, not to a lexical head, it was argued that an alternative analysis is possible, which maintains the generalization. T in these constructions is opaque and can therefore not act as host for verb raising. The only way for the structure to be broken open is by raising of T to AGR, so that the specifier of TP becomes available as landing site for the barrier VP: now the clitic and the verb can respectively move to the T-AGR complex. In Portuguese, future and conditional auxiliaries were argued to trigger clitic climbing and subsequent verb incorporation (in order to be licensed), thus obtaining the right linear string.

Notes

1. The class of elements that Pullum & Zwicky (1983) consider to be clitics is much less restricted than the class of pronominal clitics discussed in this study. The general concept of clitic subsumes such diverse phenomena, however, that it is probably best to think about it in terms of family resemblances, where two elements that belong to this class may not share any features at all. This way of looking at the facts may render the unified concept of clitic meaningless.

2. In the next section, it will be argued that these object markers can easily be analysed as pronominal clitics (cf. Bresnan & Mchombo 1986, 1987), while preserving the generalization about functional heads.

3. Cf. Zwicky (1977) for a typology of clitics.

4. Cf. McCloskey (1986) for an analysis along those lines for subject agreement and prepositional object agreement in Irish.

5. There is some evidence that infinitivals in Portuguese behave like their Italian counterparts, in the sense that they obligatorily raise all the way to AGR; they end up in a position preceding the negative adverb (cf. Figueiredo Silva 1991 for a discussion of verb movement in Portuguese).

   (i) Não sair mais de casa ...
   NEG to leave anymore the house

   (ii) *?Não mais sair de casa ...
   NEG anymore to leave the house

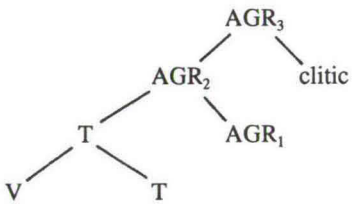
6. Vacuous movement of AGRP is needed anyway, in order for the clitic to move over the complementizer of the embedded clause, without the latter being able to constitute a minimality barrier; recall that C is an A-bar head, and can thus act as a closer potential governor for the trace of the clitic in terms of Relativized Minimality (see chapter 2).

7. Notice that the infinitival verb cannot move through the complementizer to obtain the right result and void intermediate barriers. Such an approach would have a number of disadvantages. First, the infinitival would need to incorporate into the matrix verbal complex before the clitic, by necessity

clearing the way for the latter. Second, the complementizer would constitute a minimality barrier for the clitic under Relativized Minimality, V-to-C being an instance of A-bar movement (cf. the discussion in chapter 2); under that scenario, the clitic would be prohibited from climbing at all. Finally, incorporation in Baker's (1988) sense being an instance of A-movement, an improper binding configuration would result for the incorporating verb: the A-traces in the upstairs V and the downstairs AGR would be connected via an A-bar trace in C, yielding an improper binding configuration.

8. Another suggestion by Kayne (p.c. and class lectures 1989) brings about the same effect: if the clitic were to attach to the right of the matrix verbal complex, it would become the head in terms of the (Relativized) Right-Hand Head Rule (Di Sciullo & Williams 1987), thus blocking movement of the embedded verb, because it blocks the relevant features from the matrix verb which require a lexical head to incorporate, to percolate up high enough, or suppresses them (cf. Pollock's opacity).

(i)



Merger of relevant features can take place in the instances of substitution, leading ultimately to convergence of features of V, T and AGR_1 on AGR_2 (cf. remarks in chapter 2); the deficiency of V is thus percolated up to AGR_2, which still requires a lexical verbal element in order to be licensed properly. The highest instance of AGR_3 will inherit the relevant features from the clitic, in accordance with the (relativized) RHHR; thus, the information on AGR_2 will not be accessible to the dominating head, so that V-incorporation is not forced, leaving the material under AGR_2 unlicensed. The regular instances of cliticization to a tensed verb, where both pro- and encliticization are possible, are not problematic from this perspective, since all selectional requirements of the verb and its inflectional morphology are fulfilled *prior* to adjunction of the clitic; the fact that the clitic will act as head when it occupies the right branch thus does not cause problems.

9. Recall especially the order of negation and clitic with respect to the verb, as discussed in chapter 2.

10. Notice that under these assumptions a configuration may have to be filtered out at s-structure, if it turns out that a clitic could have attached to a higher functional head. Thus, in a clitic climbing context, if the clitic attaches to the embedded AGR, after the embedded verb has raised, it will violate the condition that it must attach to the highest functional head available at s-structure, after the AGRP has been moved into the specifier of the embedded CP, in order to satisfy the μ-criterion. Such a derivation will thus be filtered out at s-structure; only a derivation which reflects a different order of operations, where the barrierhood of AGRP has been voided prior to clitic movement, will be ruled in at s-structure.

    In case the matrix verb is [-μ], no AGRP-movement will be forced, so that the highest functional head available to the clitic is the AGR-node of the embedded clause. Notice that all ordering is intrinsic.

11. Similarly, lowering of AGR and/or T in some contexts must take place prior to cliticization, in order to obtain the right configuration for the clitic to attach to.

12. Hale (1988) has extended this pronoun incorporation analysis to agreement phenomena in Celtic and Athabaskan languages, which show a similar complementary distribution between agreement morphology and overt NPs (cf. also discussion at the end of this section).

13. Retraction of the H-tone does not take place if the verb is followed by an adjunct, indicating that these elements must occupy a position within the VP-brackets, unlike the doubled NP.

14. The object clitic itself is not the cause of the retraction of the H-tone, as can be seen in cases where additional material occurs within the VP-brackets; here, even though the object clitic is present, no retraction takes place:

    (i) Ndikufúná kutí áná ánga [$_{VP}$ a-li-pítíriz-é ndí inu] phúnziro
    1S-want that children my 3P-CL-continue-SUBJ with you lesson
    'I want my children to continue it with you, the lesson'

15. A similar conclusion is reached for Sesotho by Cootes (1989). She shows that there is also a complementary distribution between the agreement morphology and an overt canonical object; this state of affairs is also interpreted as an instance of pronoun incorporation.

    In Sesotho the doubled NP also has greater distributional freedom than regular

objects, and when appearing in the canonical post-verbal position, it can be separated from the verb by adverbials, which is impossible if the object marker is absent on the verb. Moreover, when the verb is ditransitive, the NP cannot separate the verb and its second object PP when an object marker is present on the verb; when it is absent, the NP and PP can appear in either order, indicating that the object obligatorily does not appear in a VP-internal position when the object marker is present.

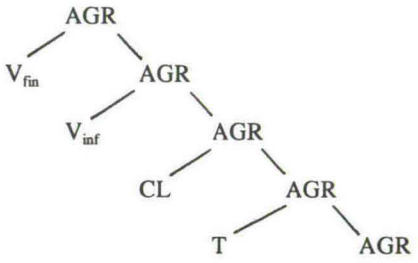
In Sesotho, as in Chichewa, the subject agreement does not show comparable characteristics; there is no complementarity in distribution between it and the subject position. This strengthens the pronoun-incorporation approach: if both processes were handled by agreement morphology licensing a small *pro*, their behavior should be more nearly parallel. Similar observations can be made in a number of other Bantu languages (for instance Nkore-Kiga, cf. Taylor 1985).

16. Under this perspective, T and AGR on their own are too weak to L-mark their complement, but together they become heavy enough in the relevant sense to perform the task of L-marking. In a language like Chichewa, where both are represented separately morphologically, this makes intuitive sense.

17. This account forces a non-structural perspective on the adjunction-substitution distinction in head movement; this distinction must be made in terms of subcategorization and selection, in view of the fact that the clitic ends up in a position that is closer to the agreement morphology than the verb. The latter thus cannot literally incorporate in an open slot in AGR or T, because that would create an improper string. Verb raising is an instance of substitution in the sense that it satisfies relevant features on T and AGR, whereas the clitic adjoins, because it does not; there is no structural distinction corresponding to these processes, though: the resulting structures are the same. This goes counter some suggestions Rizzi & Roberts (1989) offer.

18. Notice, though, that for such an analysis to work, the matrix verb would have to be phonologically empty by necessity, since it would incorporate in its AGR after the clitic and the embedded verb have moved in, in accordance with the bottom-up principle.

(i)



This rendering of facts does stress the necessity of left-adjunction once more: the selectional restrictions of the matrix AGR must be accessible to the matrix verb until it has a chance to attach to it; if any element were to right-adjoin before then, the relevant information would become inaccessible.

The phonologically empty matrix verb would force the marked derivation independently of the opacity of T, in that it would never be able on its own to L-mark the VP once it raises to T, because it is not heavy enough lexically, in a trivial manner; the only way to break the VP open is to move T to AGR and thereby enable VP to move into the specifier of TP, to void its barrierhood in turn.

Notice that at some point in time Portuguese will be reanalysed mono-clausally, along the lines sketched for Chichewa. This happens as soon as language learners no longer perceive the infinitival form of the stem.

19. The approach to endocliticization sketched here has in common with Klavans' (1979, 1981) account that both assume that the clitic attaches to inflectional morphology. In Klavans' account, this is a lexical process, however, deriving inflected clitics. In the GB framework, this account is suspect, since it allows verbal morphology to attach to a nominal element, a move that is only open to derivational morphology; this would in turn violate the Projection Principle (Chomsky 1981): if the clitic merges lexically with the inflectional morphology, an empty object position cannot be licensed, verbal and inflection morphology being independent, under the generalized version of X-bar theory (cf. Abney 1987). Alternatively, a functional head would be absent at d-structure, so that some maximal projection would remain unlicensed (see discussion chapter 5).

Klavans cites a solution proposed by Zwicky and Pullum, whereby a metathesis rule applies to the outcome of normal encliticization and

procliticization; such an approach can of course account for the relevant facts, but renders the morphology-syntax interface much less transparent than the approach sketched here, in the sense that specific morphological mechanisms must be assumed.

20. See also Baker & Hale (1990) for a statement of this elegant generalization.

21. McCloskey (1986) has offered an interesting critique of the movement analysis that Hale proposes and that is adopted here; he argues that agreement morphology licenses a *pro*-element, under government. His main argument against a movement analysis is that an agreeing verb can take a conjoined NP as subject, of which only one conjunct is phonologically realized and where the verb agrees with the other (which is by definition the first):

(i) Bhíos *pro*-féin agus Tomás ag caint le chéile
be-PAST/1S EMPH and Tomas talk-PROG with each other
'Tomas and I were talking to one another'

If movement were involved, the Coordinate Structure Constraint (Ross 1967) would be violated. McCloskey redefines the government relation in such a manner that in a conjoined structure only the first conjunct, not the second one or the mother node, is governed by an external head. Under such an analysis, null pronominals are *obligatorily* licensed when an appropriate agreement element is present; this is rather atypical for the licensing of an empty pronominal, though. Moreover, the alternative raises questions as to the satisfaction of the theta criterion, if only the first conjunct can be governed by a subcategorizing head.

Another argument McCloskey brings forward in favor of his account, besides agreement of the first conjunct, is that nominative case is assigned only to the first conjunct in a conjoined subject; the other conjunct receives the default accusative.

(ii) Chuaigh Eoghan agus é/*sé féin bhaile
went Owen and him/*he EMPH home

The validity of the CSC, which is so crucial for McCloskey's criticism to hold, has been questioned independently by a number of linguists recently, though (Hale, p.c., Kayne 1991b, de Vries 1992, Oishi 1992). De Vries (1992) explains a number of CSC-effects in terms of theta theory and binding theory, within Huybregts' set union account of coordination. Kayne offers an explanation for procliticization to infinitival imperatives in Italian by assuming

that it is an instance of clitic climbing to an empty modal. He discusses cases like the following, where only the clitic from the first conjunct escapes to the empty modal:

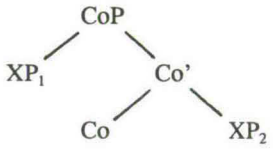
(iii) Non lo *MOD* [prendere adesso] e [riportar-me-lo tra tre giorni]
NEG it take now and return-me-it in three days

Kayne also discusses extraction facts like the following from English, which are slightly marginal at worst:

(iv) John Smith, who I am going to speak to *t* tonight and then see his wife tomorrow, is an old friend of mine

The agreement and case facts that McCloskey (1986) discusses suggest a structural asymmetry between the two conjuncts. Taking the generalized X-bar theory seriously, one could argue that the conjunct itself is a head (as was done for the wrong reasons by Klein 1985, and independently by Oishi 1992):

(v)



Other arguments in favor of such an asymmetry are discussed by Oishi (1992): the first conjunct can bind a pronoun in the second conjunct, but not vice versa, and a negative polarity item can be licensed by an element in the first conjunct; both of these processes involve asymmetric c-command, and can thus be taken as evidence for an asymmetrical structure. Additionally, it can be observed that extraction from the first conjunct is generally better than extraction from the second conjunct, and that a subject can bind an anaphor in the first, but not in the second conjunct; both of these observations also argue in favor of an asymmetry, whereby the first conjunct is more accessible than the second.

The phenomena that McCloskey discusses can now be explained in terms of specifier-head agreement: only XP_1 has such a special relationship with the head of the conjunction phrase (CoP). A weakening of the CSC and adoption of the above structure allow a movement analysis of Irish agreement in terms of pronoun incorporation to be maintained, due to the fact that specifier-head agreement involves only the first conjunct; moreover, the case asymmetry is readily explained in a similar fashion. These considerations weaken

McCloskey's critique considerably (see however also Stump 1984 on Breton).

A more detailed discussion of these problems lies outside the scope of this study, but two obvious problems should be mentioned here: first, it is not a priori clear how coordinations of 3 or more conjuncts with one conjunction (*X, Y and Z*) can be handled in a structure like the above; and second, there are languages where the first and second conjunct alternate in grammatical prominence: in French, for instance, a masculine conjunct, whether it is the first or the second, by definition determines agreement, and thus always overrules a feminine conjunct, independently of its position in the linear string.

22. These two nodes account for the clause-bound character of this agreement process in Celtic: the pronoun can never climb and incorporate into a higher verb, because a minimality violation would result. More in general, Celtic does not allow clitic climbing (McCloskey, p.c., Rouveret 1990), indicating that the complementizer which hosts the verb does not bear the feature $[+\mu]$; even though no barriers intervene after V-to-C, C and AGR will still create a minimality configuration, under the assumption that they are A-bar head positions (cf. discussion in chapter 2).

23. It is important in this connection to stress that in the examples of N-incorporation from object position, whereby material is stranded in the NP, the remnants by definition do not uniquely involve a head; it is usually phrasal material that is left behind (Baker 1988). This is what one would expect under the analysis presented here.

Chapter 5

Constraints on Parametrization

5.1 Parameters: typology and constraints

Induction cannot be a proper mechanism for demarcation in science, in view of the fact that complete verification is impossible by definition, from the logical point of view; Popper (1982: 86) therefore proposes falsification as the central concept in scientific progress and argues that a hypothesis is in principle falsifiable if it is internally consistent and all basic statements can be divided into two classes with respect to the hypothesis: those with which it is inconsistent on the one hand and those that do not contradict it on the other. From the point of view of Popper's notion of falsificationism, the notion of parametrization needs to be constrained, in order not to accommodate any account of variation conjectured by a linguistic analysis.

The concept of parameter, as it has been developed in the principles and parameters framework of generative linguistics during the last decade or so, is a very powerful tool, in that it allows an elegant statement of cross-linguistic variation and diachronic change.

On the other hand it potentially weakens the theory, as long as no conditions are formulated to restrain its power; in the absence of such constraints, the notion becomes void of any content, and is basically another way of stating differences between languages, without explaining them. Parameters have taken a number of very distinct forms in research, an indication of the loose sense in which the concept has been used.

Parametrization has been conceived of in at least two different ways: on the one hand, it has been associated with principles of UG (Chomsky 1981), on the other, it has been associated with lexical items, especially functional heads (Borer 1984). Within the first approach, a number of ways of making the notion more precise can be distinguished: one way of stating parameters has been in terms of binary-valued switches, ranging over such diverse phenomena as the direction of government in a language (left/right), and the configurationality of a language (+/-); another way of stating parameters in this tradition involves listing elements that have a certain property, for instance the maximal projections that act as bounding nodes in a particular language or the heads that can act as proper governors, so-called list-fixing; a third way of using the notion parameter as part of UG principles is in terms of module interaction: a certain rule or principle can be stated to operate at a certain level of representation in a given language, for instance *Rule R* applying in syntax or in phonology (Chomsky 1981).

A last way in which the notion has been used, which fits in with the second rough conception of parametrization distinguished above, involves lexical learning; under this perspective, the syntax of languages is invariant (UG), but lexical properties may vary from language to language. There are basically two varieties of lexical learning: it can be conceived of as being applicable to any lexical item (Bickerton 1988), or it can be restricted to just functional heads.

As this list indicates, very different ways of making the notion of parameter work have

been proposed by different authors. One danger of such a diversity in using such a central concept is that falsifiability of a hypothesis which makes use of parametrization becomes much more difficult or even impossible, as the number of different interpretations of possibly damaging evidence increases.

A number of ways have been discussed in the literature to restrict the scope of parameters. One such constraint is the Subset Principle, which requires that values of a parameter can be ordered in terms of subset-superset relations; a child acquiring a language always starts out with the smallest subset, extending the set by resetting a parameter when it encounters positive evidence for such an extension (no negative evidence). Another constraint that has been proposed to restrict the power of parametrization is in terms of degree-*n* learnability, where the number of embeddings that are needed to set a parameter is restricted to *n*; in the course of years, this value has dropped from 2 (Wexler & Culicover 1980), to 1 (Morgan 1986), to 0 (Lightfoot 1989, 1991).[1] Both of these constraints are tightly linked to learnability theory.

A third very strong constraint on parametrization reduces it to properties of a subset of elements listed in the lexicon, viz. functional heads. This way of constraining the concept is even stronger than lexical learning, in that it restricts variation to a very limited number of elements (i.e. AGR, T, C, ASP, D, Q, DEG). Thus, lexical heads, so-called substantive elements, are assumed to have the same properties across languages. Borer (1984) was the first to work out this restricted notion of parametrization in some detail. More recently, Ouhalla (1988, 1991) has shown how an enormous amount of variation in phrase structure across languages can be explained by assuming that only functional heads have different c-selectional properties. He observes the following typological correlations:

(1) VSO-languages:
  a. have AGR internal to T
  b. have SVO as an alternative order
  c. lack non-inflected infinitives[2]

(2) SVO-languages:
  a. have AGR external to T
  b. tend not to have VSO as an alternative order
  c. have non-inflected infinitives

He is able to show how all these properties follow from the c-selectional requirements of the functional heads that make up the clause structure: in VSO-languages, T selects AGR and is thus hierarchically higher than the latter, so that the subject does not have to move all the way to the highest specifier in order to get assigned case, but can stop in the specifier of AGRP, right after the verb, which has raised to T; it can optionally topicalize, though, giving rise to the alternative SVO-order. Since the verb has to raise all the way to T, it will by definition move through AGR, so that even infinitival verbs, which only require licensing by T, end up being inflected for agreement. In SVO languages, on the other hand, AGR c-selects T, explaining why it occurs external to T, and why there is no alternative VSO order: the subject must move to the specifier of AGR in order to get assigned nominative case, and will thus by definition precede the verb; since infinitival verbs can be properly licensed by T, they don't have to raise up to AGR (cf. discussion in chapter 1), but stop in T, explaining the lack of inflected infinitivals. Thus, the typological correlations summarized above follow from two simple parameter settings:[3]

(3) a. AGR c-selects T
  b. T c-selects AGR

As this example shows, constraining parameters to lexical features of functional heads allows nonetheless an interesting account for a number of apparently unrelated features

of typologically distinct languages. Chomsky (1992: 5) has adopted a similar perspective on parametrization: "Variation is limited to nonsubstantive parts of the lexicon and general properties of lexical items. If so, there is only one computational system and one lexicon, apart from this limited kind of variety". Later he reduces it even further in terms of morphological properties. One of the interesting consequences of such a conjecture is that a certain language can be expected to display different settings for a parameter simultaneously for different instances of a functional head.[4] This has independently been argued by Wexler & Manzini (1987), in their discussion of binding domains: within a given language, these domains may differ for distinct elements. As will be argued in the next section, Portuguese T offers another example of this phenomenon: future and conditional T behave differently from the other instances of T.

In the next section, it will be shown that the parameters involved in cliticization phenomena that have been proposed in this study are constrained in a similar fashion: they can all be stated as lexical properties of functional heads; thus they fit in nicely with this restrictive perspective on parametrization and provide independent support for it.

5.2 Parameters in cliticization: some generalizations

In this section, the main conclusions from the preceding chapters will be summarized, with special reference to the parameters that are involved in cliticization; it will be argued that no special parameters need to be invoked for cliticization, but that instead the range of variation observed in cliticization processes cross-linguistically is determined by independently motivated parameters.

The central generalization about pronominal clitics has been that these elements must adjoin to a functional head at s-structure in order to be licensed, a property that is part

of their lexical content in the form of an m-selectional requirement. In the languages under discussion, this means that in finite clauses the verb clears the way for the clitic to adjoin to AGR, by moving to AGR itself, in order to pick up its inflectional morphology. By properly lexicalizing intermediate functional heads, the verb allows L-marking of the respective complements, so that the clitic can move to AGR in one big swoop, without violating the ECP. Being a head, the clitic cannot adjoin to the intervening barriers, and it is not a proper lexicalizer for the functional heads associated with inflectional morphology either.[5] In periphrastic tenses, there remains one barrier between the clitic and its landing site, viz. the AGRP associated with the participle, since this element is selected but not theta-governed by the auxiliary; the barrierhood of this AGRP can be voided by moving it into the specifier of an L-marked category, i.e. TP, so that it can get L-marked via specifier-head agreement.

The maximal number of barriers that may separate the clitic from its landing site is one. If more than one barrier intervenes, the highest barrier can be voided by vacuous movement, but that still leaves the dominated barrier(s) active, specifier-head agreement not being a transitive property, thus inducing an ECP violation. Movement of the lower barrier maximal projection(s) in such a configuration is impossible, because that would lead to a improperly governed trace of the moved barrier: this element would have to move over the dominating barrier(s), and the only way for it to satisfy the ECP is in terms of antecedent government, which requires that no barriers intervene between antecedent and trace. In the cases of cliticization disussed up to now, the languages under consideration behave on a par. Different behavior was observed with respect to clitic climbing on the one hand and endocliticization on the other. Both of these phenomena can be explained in a parallel fashion, making use of the same mechanisms of verb movement and vacuous movement of a barrier.

Clitic climbing is allowed in Italian and Kru, but occurs only in a very limited number

of contexts in French. The contexts where it can occur in French all involve a complement which is not a full-fledged clause: in causative constructions, it is a TP; with perception verbs, it is an AGRP.

(4) a. V_{CAUS} [$_{TP}$ Spec [$_{T'}$ T [$_{VP}$ V clitic ...
b. V_{PERC} [$_{AGRP}$ NP [$_{AGR'}$ AGR [$_{TP}$ Spec [$_{T'}$ T [$_{VP}$ V clitic ...

In both cases, the verb can raise to T, voiding barrierhood of VP; barrierhood of the complement TP and AGRP is voided by the selecting causative and perception verbs, respectively. In the causative, this means that the clitic can attach to the matrix verb at no extra cost, without violating the ECP, whereas in the case of the complement of a perception verb, the barrierhood of TP still has to be voided. Since it is the only barrier, vacuous movement can do the job. As this reasoning shows, the same mechanisms are at work here as in simple mono-clausal instances of cliticization. Moreover, the fact that French only allows clitic climbing in the contexts discussed above indicates that the distance over which the verb raises is a crucial factor for clitic climbing, too: in regular cases of sentential complementation, where the complement is a full CP, one or two more maximal projections would intervene between the clitic and its landing site in comparison with perception verbs and causative verbs, respectively, arguably constituting an extra barrier and thus inducing an ECP violation; vacuous movement of one of the barriers does not clear the way for the clitic.

It could indeed be shown that there is a correlation between the distance over which infinitival verbs raise on the one hand and the existence of clitic climbing on the other: only if infinitival verbs raise all the way to AGR can the clitic climb.[6] V having voided barrierhood of VP and TP in the familiar way the only barrier that intervenes between the clitic and its host in that case is AGRP, and barrierhood of this element can be voided by moving it into the specifier of CP. It was argued that this movement is only

possible, and indeed obligatory, if it is triggered by the matrix verb; this verb selects a complementizer with a special feature [+μ], which in turn forces movement of AGRP, via specifier-head agreement, parallel to Rizzi's (1991) Wh-criterion.[7] In cases where the verb doesn't raise all the way up to AGR, at least two barriers intervene between the clitic and its s-structure host. Vacuous movement of the AGRP in these cases will still leave the barrierhood of TP (and VP) intact, thus inducing an ECP violation. It was shown that along these lines the loss of clitic climbing during the history of French can be explained as well: whereas in Old French and 17th century French, AGR still hosted infinitival verbs, Modern French lost exactly this property; consequently, two (or more) barriers intervene between the clitic and its s-structure host.

Crucially, the only parametrized option involved is the distance over which the verb moves; the licensing of traces of vacuous movement of barriers is constrained in a universal fashion, since these traces are in need of antecedent government, and their freedom to occur is thus determined by independent features of the grammar (proper government requirements). The scope of verb raising, however, is in turn determined by features of the functional heads that act as potential hosts for the verb. Depending upon whether these elements are opaque or transparent (or strong or weak in Chomsky's (1991) terminology), the verb can, and thus must substitute in them. In French, the AGR associated with an infinitival T is opaque,[8] thus preventing the verb from substituting in it, whereas in Italian, this element is transparent, and thus allows the verb to raise all the way. In finite clauses, there is no difference between these languages: both T and AGR are transparent and allow the verb to raise.

(5) features on AGR/T
↓
distance over which V raises
↓
distance over which clitic can move

Thus, the hypotheses in the preceding chapters receive extra support from the point of view of restrictiveness of parametrization: no independent parameters need to be invoked to account for variation in clitic climbing, since this variation can be reduced to variation in the syntax of verbs, which in turn can be reduced to variation in the feature content of functional heads. Moreover, the parameters involved obey the restrictions on parametrization proposed by Borer (1984) and Ouhalla (1991): they are restricted to lexical features of functional heads.

The same type of parameter was also shown to be able to account for the marked phenomenon of endocliticzation in Portuguese and Chichewa. Here it is not a feature of AGR that causes a difference in the behavior of the verb, and thereby of the clitic, but a feature on T. Future and conditional T in Portuguese,[9] and T in general in Chichewa, are opaque, just like the AGR associated with infinitival T in French; this forces a derivation whereby T moves to AGR as a first step, in order to allow barrierhood of VP to be voided by vacuous movement. This was argued to be the only way to break the structure open; movement of the verb to T is ruled out by opacity, and movement of V to AGR in one swoop is ruled out, because it violates the morphological subcategorization of AGR, which requires a T-element to incorporate; vacuous movement of VP to the specifier of TP is ineffective unless TP is L-marked. The relevant parameters can thus be summarized as follows:[10]

(6)

	AGR [-opaque]	AGR [+opaque]
T [-opaque]	Italian, Old French, 17th century French, Portuguese, Kru	Modern French
T [+opaque]	Portuguese (FUT, COND), Chichewa	

Of the four logically possible combinations of parametric values, three can be found in Romance: [-opaque] AGR and T are found in Italian finite and infinitival clause, for instance; [+opaque] AGR in combination with [-opaque] T are found in French infinitival clauses, whereas French finite clauses have the same setting as Italian; [-opaque] AGR and [+opaque] T are only found in Portuguese future and conditional in Romance. Romance does not display the last logical possibility: [+opaque] AGR and T.

A [-opaque] AGR[11] creates the syntactic prerequisites for clitic climbing, while a [+opaque] AGR excludes clitic climbing, unless some extraneous factors occur (marked sentential complements as with causative verbs and perception verbs);[12] this is a necessary but not a sufficient condition for clitic climbing to occur: it must work in tandem with lexical requirements of the matrix verb (i.e. [+μ]-specification). A [+opaque] T, on the other hand, forces endocliticization, whereas a [-opaque] T does not allow this phenomenon; in the latter case, there is a less costly option of raising V via successive head positions. The interaction of the mechanisms involved can be summarized as follows:

(7) a. Cliticization in simple and synthetic tenses is licensed by V-raising
b. Cliticization in periphrastic tenses is licensed by V-raising in conjunction with vacuous movement of the AGRP barrier
c. Clitic climbing is licensed by V-raising, vacuous movement of the AGRP barrier in conjunction with a lexical specification of the matrix verb
d. Endocliticization is triggered by opacity of T in conjunction with vacuous movement of the barrier VP

All parameters are thus constrained in being by definition lexically determined features of functional heads; this explains the fact that even within a language there can be a systematic split in behavior (cf. future and conditional tenses in Portuguese, under a mono-clausal analysis). Even though they are features on a head, they can influence apparently unbounded processes, like clitic climbing, as well as strictly local processes such as endocliticization, because of their interaction with vacuous movement of barrier maximal projections. The restrictive nature of the parameters involved, as well as the fact that they are independently motivated in the syntax of verbs, provide independent, though highly theory-internal, evidence for the framework proposed in this study. On the other hand, the explanation of cross-linguistic variation of clitic phenomena in terms of lexical features of functional heads also strengthens the restrictive conception of parametrization, first proposed by Borer (1984), which restricts variation to just these features.

5.3 A note on the acquisition of clitics

Children acquiring French make surprisingly few mistakes in cliticization in different contexts (cf. Clark 1985). In the unmarked case, where the clitic precedes the verb and does not occupy the canonical object position in the linear string, they perform almost perfectly at a very early age, around two years; some examples illustrate this:[13]

(8)	a.	J'en veux I thereof want	(2;03;06)
	b.	Je le casse I it break	(2;03;14)
	c.	On le partage we it share	(2;03;21)
	d.	Je le mets dedans I it put therein	(2;04;12)

There is one domain of exceptions to this flawless pattern, involving precisely the marked enclitic configurations that show up in positive imperatives (cf. discussion in chapter 2). French children seem to go through a number of distinct stages in the acquisition of the order of verb and clitic in this construction type. During a first stage, the children consistently use the clitic in the preverbal, unmarked position; the following examples are therefore all illicit in adult French:

(9)	a.	Le mets là-dedans! it put therein	(2;00;13)
	b.	Les prêtes! them lend	(2;03;16)
	c.	Papa, le mets là! daddy it put there	(2;04;12)

During this stage, children often seem to avoid using a clitic; instead, they will, more often than in stages to follow or in different construction types, use a full NP, a demonstrative pronoun or another deictic expression, which occupies the canonical object position, to refer to an object or a person, even if the discourse requires a clitic.

(10) a. Lis celle-là! (2;03;05)
read that-there
b. Papa, donne les lunettes! (2;03;06)
daddy give the glasses
c. Mets ça! (2;04;12)
put that

During a second stage, children start making correct positive imperatives, with the verb preceding the clitic; during this stage, the incorrect proclitic still keeps showing up, however. Both orders are used interchangeably, without any systematicity.

(11) a. Le fais! (2;07;04)
it do
b. Non, non, donne-le! (2;08;06)
no no give it
c. Tu les mets![14] (2;08;06)
you them put
d. Lis-le! (2;08;25)
read it

During a third stage, finally, only the correct, marked order verb-clitic is retained in positive imperatives:

(12) a. Dis-le moi, maman! (2;10;18)
say it me mama
b. Mets-les! (2;11;21)
put it

Schematically, the development of cliticization in positive imperatives can be summarized with the following templates:

(13) a. stage 1 clitic - verb
b. stage 2 clitic - verb - clitic
c. stage 3 verb - clitic

In negative imperatives, which exhibit the unmarked order in adult French (cf. discussion in chapter 2), on the other hand, children do not seem to make any mistakes from their first appearance.[15]

(14) a. Ne l'ouvre pas! (2;02;03)
NEG it open not
b. Le refais pas! (2;06;13)
it again do not[16]

The pattern of acquisition of clitics in positive imperatives can be explained in terms of the framework that was developed in the preceding chapters. A priori, two possible structures can be associated with a clitic-verb complex like the following:

(15) Jean le mang-er-a
Jean it eat-FUT-3S

The clitic can either attach to the verb stem, and subsequently the verb can raise to T and AGR to pick up its inflection. As can be seen from the negative sentences above, the verb does raise all the way to AGR, even during the earliest phases in the acquisition process: it ends up in an s-structure position preceding the negative adverb (cf. Weissenborn 1989, Pierce 1992 for similar conclusions).[17]

Alternatively, the verb could first pick up its inflectional morphology in T and AGR, and only after that would the clitic attach to the verbal complex; this derivation has been argued to be the only licit one in Romance, due to the fact that the clitic must attach to a functional head (chapter 1). The structures associated with these respective derivations

are the following:

(16) a. [[[clitic [verb]] tense] agreement]
b. [clitic [[[verb] tense] agreement]]

The difference between these structures can be expressed in terms of distinct selectional restrictions of the clitic: in structure (b), it attaches to a functional head, whereas in structure (a) it attaches to a lexical head. Descriptively, the latter structure adheres to the HMC, under its most rigid interpretation, whereby no head may be skipped, neither phonologically empty, nor overt heads; the former structure adheres to a less strict interpretation of the HMC, whereby overt heads still create a barrier for movement, but heads that have been emptied by previous movement do not (under the GTC). The change in the grammar of the child between the first and second stages described above can thus be expressed in the following manner:

(17) During the first stage in the acquisition of cliticization, children attach clitics to lexical heads, whereas from the transition to the second stage onward, they attach them only to functional heads.

This conjecture implies that children start out with the most constrained grammar, obeying a HMC-type restriction on verb movement and clitic movement.[18] It has some initial plausibility, since it can explain why children only have problems with the marked verb-clitic order. Only in these configurations does a contradiction arise between the requirements of the HMC and the order of inflectional morphology and clitics that indicates a violation of these same requirements: both inflectional morphology and clitics appear on the same side of the stem, in that order. There is some additional evidence for the above conjecture: at around the same age that uncertainty arises with respect to the position of the clitic in relation to the verb in positive imperatives, children start producing other structures which overtly violate the HMC, which are absent in their

speech up to that point; some examples in which the clitic moves over an overt head are given below:[19]

(18)	a.	Tu l'as pas vue You her have not seen	(2;07;04)
	b.	Tu l'as mangé you it have eaten	(2;07;11)
	c.	Je l'ai emmené I it have taken away[20]	(2;11;21)

Thus, the conjecture that the children change the selectional restrictions of the clitic (alternatively: start out obeying the strongest version of the HMC, only later abandoning it), fares well in explaining the shift from the first to the second stage in the acquisition of cliticization in positive imperatives, as well as the emergence of overt violations of the HMC.[21] Children start using different adjunction sites to obtain the right surface order. Another change that must have taken place during this phase is that vacuous movement of a barrier has matured, in view of the fact that in periphrastic tenses (like (a) and (d) above) the clitic attaches to the finite verb. In order to escape the AGRP associated with the participle, this barrier must move to an L-marked specifier position. These conjectures predict that clitic climbing must start occurring during this same stage, since the same mechanism is relevant for that construction type. This prediction is borne out by the facts: clitic climbing from the complements of causative verbs and perception verbs starts occurring around the same time, violating a strong version of the HMC.

(19)	a.	Non, faut pas me faire manger no must not me make eat	(2;08;08)
	b.	Eh bien, je le fais tourner well I it make turn	(2;08;29)
(20)		Je veux plus te voir pleurer I want (NEG) anymore you see cry	(2;08;29)

The shift from the second to the third stage in the acquisition of cliticization in positive imperatives still needs to be accounted for. During the third stage, clitics uniformly occur to the right of the verb in positive imperatives. Kayne (1990, 1991a) has suggested an interesting explanation for the marked verb-clitic order in Romance in terms of the position where the verb ends up at s-structure; under this perspective, the clitic uniformly left-adjoins to the highest functional head available to it (cf. chapter 2), i.e. AGR in the structure assumed in this study, and it is the verb that moves to a position higher up. In Kayne's (1990) analysis, the verb adjoins to IP (= AGRP):

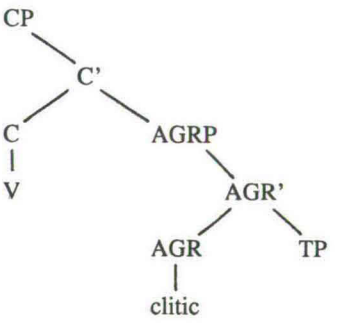
(21) $[_{AGRP}\ V\ [_{AGRP}\ [_{AGR'}$ clitic + AGR ...

This structure violates the strong version of X-bar theory adopted here, which only allows heads to adjoin to or substitute for other heads, and maximal projections to maximal projections.[22] In chapter 2, these constructions were analyzed as instances of residual verb second, i.e. V-to-C. This provides a way of explaining the shift from the second to the third stage:

(22) In the early stages of development, children do not move the verb into COMP; this feature of their grammar matures only during the transition from stage two to three.

The resulting structure of positive imperatives looks as follows:

(23)



The difference in behavior between negative and positive imperatives can now be explained in terms of the blocking effect of AGR in these cases:[23] the A-bar status of this head position prevents the negation from moving to its appropriate host, the verb in C, in one swoop, because that would involve A-bar movement over an A-bar head, in violation of Relativized Minimality; moreover, the clitic, being adjoined to AGR prior to movement of negation, by definition constitutes another minimality barrier for the trace of negation, both being instances of adjunction. Movement via AGR, which would yield a well-formed binding configuration, is excluded, because that would involve excorporation.[24]

It is thus predicted that in Old French, where an overt subject pronoun can both precede and follow the fronted verb in positive imperatives, due to the fact that the verb raises to C and the subject optionally topicalizes (chapter 2), only the former order is allowed with negative imperatives; indeed only non-inverted structures are attested, i.e. no residual verb second has taken place:

(24) Tu n'attends point de secors!
you NEG wait any help

The structure of these sentences, just like some of the proclitic structures in the early

stages of the acquisition of imperatives, is basically declarative, even though these sentences have imperative force. This is what is expected under the analysis presented above, since the imperative morphology in C has not been picked up by the verb; thus, there is a correlation between word order and the presence or absence of imperative morphology (cf. also Zanuttini 1991).[25]

Thus, whereas children in the second stage only have the option of randomly attaching the clitic to the left or the right of the functional head AGR to get the right word order, when they enter the third stage, they move the verb on to C, and can thus simplify their grammar by only allowing left-adjunction of heads. The enclitic structures that result from right adjunction of the clitic to AGR are ruled out independently by the Right-hand Head Rule (Di Sciullo & Williams 1987);[26] this constraint will independently prevent the child from persisting in representing the surface string in this manner.[27] It can also explain the uncertainty with respect to the order of verb and clitic in the intermediate stage: if the right surface order is obtained by right-adjoining the clitic to AGR, the RHHR is violated. The contradiction can be avoided easily by uniformly left-adjoining.

Residual verb second exists in French in a number of interrogative contexts, where it appears either obligatorily or optionally, as in the following examples (cf. Rizzi 1991):

(25) a. Que manges-tu?
what eat you
b. * Que tu manges?
what you eat

(26) a. A qui as-tu parlé?
to whom have you talked
b. A qui tu as parlé?
to whom you have talked

As was already pointed out earlier, children only start acquiring subject-auxiliary

inversion around the same time as they get the order verb-clitic in imperatives right; the co-occurrence of these phenomena can thus be taken as evidence for the maturation of the same underlying process, viz. V-to-C. The full development of inversion takes much longer, though, and is not completed until fairly late in development.[28] Questions in earlier stages of development can be analyzed in terms of adjunction to AGRP, along lines suggested for English by Radford (1990) and for Swedish by Platzack (1990).

(27)	a.	Où elle est, Marion? where she is Marion	(2;05;09)
	b.	Comment elle est, la piscine how it is the swimming pool	(2;07;07)

In accordance with Penner's (1991) conjecture (see also Haverkort & Weissenborn 1991, Weissenborn 1992), children acquire functional categories bottom-up. French children have T and AGR at their disposal at an early age, at least at the onset of cliticization, as indicated by the position of the verb with respect to the negative adverb *pas* around the age of two (cf. Weissenborn 1989, Pierce 1992). Either the C-projection must still mature, so that there is no landing site for the verb, since the option of adjunction to AGRP is only open to maximal projections, or C is present already, but V-to-C must still mature.[29]

In this chapter, it was argued that all parameters that are relevant for cliticization can be stated in terms of opacity features on functional heads, which account for the distance over which verbs (and other functional heads) raise. This in turn acts as a constraint on the distance over which the clitic can move to find an appropriate host. This approach allows a unified account of a number of different clitic phenomena. Some aspects of the acquisition of cliticization in imperatives in French were described in terms of a number of hypotheses developed in this study: during distinct stages in the acquisition, the child first abandons the HMC and then starts using V-to-C.

Notes

1. A more detailed discussion of these constraints lies outside the scope of this study. For an overview and discussion of these and other constraints on parametrization, the reader is referred to Atkinson (1992).

2. An interesting consequence of this correlation is that the Celtic languages are not proper VSO languages, contrary to what has been argued in the typological literature (Comrie 1981): AGR is external to T, these languages do not have SVO as an alternative word order, and they only have non-inflected infinitivals (cf. Ouhalla 1991).

3. These parameters interact with parameters that determine whether the functional heads constituting the clause structure are bound or unbound morphemes. The latter type of parameter again only involves lexical properties of functional heads.

4. In other words: a functional head has a number of distinct subtypes with different feature contents in these cases.

5. Moreover, if the clitic were to lexicalize the intermediate functional heads, there would be no way to prevent clitic climbing from complement clauses that are not introduced by an overt complementizer.

6. This generalization holds for Romance. In Kru infinitival clauses, no verb raising occurs, but independent mechanisms void barrierhood of other maximal projections than VP; barrierhood of the latter category is voided by vacuous movement that is similar to this type of movement in Romance (cf. discussion in chapter 3).

7. The role of C in Kru is slightly different; in this language, C has retained verbal features which allow it to L-mark its complement. Vacuous movement of VP to the specifier of CP can subsequently void the latter's barrierhood. Notice, that this involves once again a lexical property of a functional head. Alternatively, as has been pointed out to me by Koopman (p.c.), the complementizer could be assumed to have incorporated into the matrix clause, maybe because its verbal features need to be licensed; there is some tonal evidence supporting this solution. This alternative derivation would have the same effect, though.

8. This association is one in terms of c-selection; opaque AGR can only c-select infinitival T in French.

9. This holds under the mono-clausal analysis of the structures involving endocliticization in Portuguese, on a par with the analysis of Chichewa. Under the bi-clausal analysis of the preceding chapter, Portuguese T has the property [-opaque] generally.

10. The values given for AGR obviously hold for the AGR that c-selects a non-finite T; in case of the AGR associated with finite T, the value is [-opaque] generally for the languages under discussion.

11. This functional head is lacking from Kru altogether (cf. discussion in chapter 3).

12. Under the reductionist perspective on lexical information, these cases probably involve pruning determined by the matrix verb.

13. The acquisition data in this section are taken from a collection of longitudinal data, which range over a period of two years. The data were collected by Dominique Bassano, Madeleine Léveillé, Ulrike Rohde-Hurpin and Jürgen Weissenborn. Unless indicated otherwise, the data used are taken from the utterances of one child, but similar developments have been observed in a number of other children acquiring French or Italian (cf. Haverkort & Weissenborn 1991).

14. This example has the form of a declarative sentence with imperative force, cf. remarks below.

15. An indication that it is indeed the marked verb-clitic order that causes children to make mistakes in positive imperatives is provided by a cursory comparison of Italian and French infinitival constructions; in French, this type of construction represents the unmarked option, where the clitic precedes the verb; in Italian, on the other hand, it represents the marked option for Romance: the verb precedes the clitic. As expected, French children exhibit the adult pattern as early as around the age of two.

(i) Va l'habiller (1;10;26)
go it dress

(ii) Veux pas le mettre (2;03;15)
want not it put

Italian children around the same age seem to avoid using clitics with infinitival verbs, on a par with the French children during the first stage of development described above, as expected on the basis of the non-canonical order. They prefer either full NPs, demonstratives or other deictic expressions. At a slightly later age, they apply the option of clitic climbing, thus circumventing encliticization to the embedded infinitival verb.

(iii) Perché li devo mettere in fila? (2;07;25)
why them must (I) put in row

(iv) Non lo so fare (2;07;25)
not it (I) know to do

16. As pointed out by Morin (p.c.), colloquial French allows a broader range of clitic-verb configurations in negative imperatives than the options open to standard French discussed here. On the other hand, infinitival imperatives in Italian (Kayne 1991b) and subjunctives with imperative force in Rumanian (Zanuttini 1991) show the pattern of negative imperatives, with the clitic preceding the verb.

17. Thus, children acquiring French, like German children (Weissenborn 1991), have a number of functional heads at their disposal at an earlier age than children acquiring languages that are morphologically less complex, like English or Swedish (cf. Radford 1990, Platzack 1990). In the latter two languages, evidence for functional heads is arguably not so abundant as in the former two, so that the small clause stage is retained longer.

Under the assumption that pronominals and pronominal clitics are determiners, as argued by Radford (1990) in his study of the acquisition of functional elements in English, the very existence of these elements in the speech of French children around the age of two is unexpected. Radford discusses evidence for the absence of DET in the grammar of English children of the same age. This is another indication for a non-parallel development in the acquisition of both languages (see Pierce 1992 for discussion of non-parallel behavior in a number of other domains).

18. This constraint is abandoned completely in later stages of the acquisition, when other principles mature. This is not unprecedented in acquisition research (cf. Wexler, p.c. and Borer & Wexler 1991), nor in biology. Under the assumption of a HMC-type restriction, the change in the grammar obeys the Subset Principle, but under the assumption of a change in selectional restrictions of the clitic, no strict superset is generated by the new grammar,

since the originally licensed structures become illicit alltogether.

19. Only a very limited number of cases where children make mistakes, attaching the clitic to the non-finite verb, apparently obeying the HMC, can be found during this stage of development; all of these cases are immediately followed by the correct rendering:

    (i) Ils ont me tapé; ils m'ont tapé (2;08;18)
    they have me hit they me have hit

    (ii) Tiens, j'ai, je l'ai trouvé (3;02;10)
    well I have I it have found

20. Instances of clitic movement over an adjective are still fairly rare at this stage of the development, due to the fact that not many adjectives with an argument structure of their own have been acquired yet. Moreover, the instances that can be found, just like those of clitic movement over an overt determiner, at this stage involve prepositional clitic *en* only.

    (i) J'en étais sûr (2;08;09)
    I thereof was sure

21. Notice that in negative imperatives and other unmarked clitic-verb sequences this change does not become apparent, as a consequence of the fact that the elements involved appear on different sides of the verb, and therefore do not interact overtly. Generalizing from the overt data from positive imperatives, similar changes must be assumed to take place in these cases.

22. An interesting apparent exception to this rule is discussed by van Riemsdijk (1989), so-called split topicalization in Germanic. Van Riemsdijk argues that these cases involve movement of an X' which regenerates in its s-structure landing site, the specifier of CP; thus split topicalization adheres to the strong version of X-bar theory at s-structure.

23. Rooryck (1992) argues that evidence for a different syntactic structure for positive and negative imperatives can also be derived from differences with respect to liaison within the clitic group, under the assumption that liaison is sensitive to specific syntactic environments.

    (i) Donne lui-/z/-en!
    give him thereof

(ii) Ne lui-(*/z/)-en donne pas!
NEG him thereof give not

24. For this analysis to hold, it must be excluded that the clitic and negation adjoin to the verb when the latter is in AGR, and move along with it to C, as it does in other residual verb second cases in Romance. Relativized Minimality independently excludes any derivation where only one of these elements adjoins to AGR prior to V-to-C, because that would leave a closer potential governor in AGR.

Following suggestions by Rooryck (1992), it will be assumed that C contains agreement morphology, which must be licensed by V; adjunction of the clitic or negation to AGR would prevent these agreement features from merging with the features of V, thus yielding ungrammaticality. As has been pointed out by Zanuttini (1990), Romance dialects that display specific imperative morphology do this only in positive imperatives (cf. also Rooryck 1992); the agreement features of C in negative imperatives can never be properly licensed, and will thus be filtered out. This constraint arguably does not hold in colloquial French and other dialects that allow enclitics in negative imperatives (cf. Morin, p.c.).

Cardinaletti & Roberts (1991) discuss similar derivations in Old French and Old Italian, where the clitic cannot occur preverbally if the verb is the first element in the clause, but only if it is preceded by other material, as the following contrast from Old French illustrates:

(i) Toutes ces choses te presta Nostre Sires
all these things you lent our Lord

(ii) Voit le il rois
sees him the king

They analyse these cases along similar lines, assuming that in the latter example the verb ends up in C and the clitic remains in AGR, whereas in the former they both remain in AGR (AGR1 in their terminology). These distinct derivations are forced by a phonological constraint, which requires the clitic not to be in initial position (the so-called Wackernagel effect). Such a phonological constraint cannot be assumed to be at work in Modern French, though, since here clitics regularly move along with the verb to C, with the exception of positive imperatives only.

25. Notice that in proclitic imperatives in the early stages of acquisition, the subject can show up, just as in Old French. This is indicative for the fact that declarative clauses have imperative force (see above).

26. Recall Kayne's suggestions (class lectures 1989, p.c.) to the effect that the clitic would act as head of the complex X^0 derived via right-adjunction (see also chapter 4).

27. There is some independent evidence that children indeed randomly adjoin the clitic to AGR; Kayne (1991b) cites Rizzi (p.c.), who notes that his son, in the course of acquiring Italian, went through a stage in which he produced imperatives like the following:

    (i) non lo far-lo!
    not it do it

    This type of doubling is expected if children are confused about the adjunction site of clitics; they start attaching them in a random fashion. No similar examples were found in the French corpus.

28. In colloquial French, subject-auxiliary inversion is a marked phenomenon, which is rare even in the adult language. This can partly explain the relatively late full mastery of the phenomenon in the acquisition process: there is only limited positive evidence available.

29. There is some evidence in favor of the second conjecture: overt complementizers occur during the second stage in the acquisition of clitics discussed in this section, around the age of two and a half years.

Summary

This study is an investigation of the parameters involved in cliticization processes in Romance and Kru languages. In line with current work by Kayne, it is argued that clitic movement is an instance of head movement, interacting with syntactic properties of other heads, in particular verbs; this process adjoins clitics to the highest functional head accessible to them. Since clitics can move over overt heads, the Head Movement Constraint is obviously too strong a constraint for clitic movement. It can, however, be shown that the antecedent government requirement of the ECP suffices to restrict the distance over which a clitic can move in this respect: as long as the clitic does not cross an L-barrier, it is free to move over intervening head positions (see however the remarks below). The intervening barriers are voided by raising the verb in the familiar way, which explains in part the close interaction between clitics and verbs. This derivation of the s-structure configuration predicts the right order of clitics and inflectional morphology in the linear string: the clitics are external to inflectional morphology. The analysis also has interesting implications for our understanding of how cliticization is acquired. Children acquiring cliticization in Romance initially make the opposite assumptions about

this ordering, but restructure their grammar on the basis of positive imperatives.

In view of the fact that clitic movement can be blocked by a subset of head positions, an additional constraint is needed, though. Under an extension of the A/A-bar distinction to heads and head movement, Relativized Minimality can explain these locality facts: clitic movement is an instance of A-bar movement (adjunction) and can thus move clitics only over heads that do not create a minimality barrier, viz. A-heads. Movement over other clitics, complementizers and finite AGR, all instances of A-bar movement/heads, is ruled out. Under the assumption that a well-formed chain may only consist of elements which share the same categorial features and bar features, clitic chains originate from the Case position of the maximal projection that the clitic heads. In terms of Relativized Minimality clitic chains will not interfere with A-bar chains associated with maximal projections and A-bar specifiers.

Raising of the verb to a c-commanding head in its extended projection clears the way for the clitic to move up, but this still leaves one set of facts unexplained: the clitic can escape the extended projection of the verb that selects it. It can move out of complements of auxiliaries in periphrastic tenses and infinitival complements of verbs that trigger clitic climbing, even though in both cases the AGRP associated with the selecting verb still constitutes a barrier after raising of that verb to AGR. These facts can be explained in terms of vacuous movement of the remaining barrier into the specifier of an L-marked category, where it can be L-marked via specifier-head agreement. In instances of clitic climbing, this means that AGRP moves into the specifier of CP, where its barrierhood can be voided by the matrix verb; in instances of periphrastic tenses, it moves into the specifier of the TP associated with the auxiliary. Clitic climbing in Kru involves the same mechanisms, although the details of the derivation differ: the VP remains a barrier and is moved into the specifier of CP. Kru does not have an AGR-projection, and barrierhood of TP is voided by the complementizer.

One interesting prediction of this approach is that once again, the syntactic properties of the verb crucially interact with cliticization: only if the infinitival verb raises high enough, i.e. into AGR, is there at most one barrier (viz. AGRP) separating the clitic from the matrix AGR. If the verb raises only to T, two barriers are left (TP and AGRP), and vacuous movement of either one still leaves the other barrier intact; clitic climbing would thus violate the ECP. This is exactly the difference between Modern French on the one hand, and Italian and older stages of French on the other. In the former, infinitival verbs do not raise all the way up to AGR, whereas in the latter they do; only in the latter case is clitic climbing allowed. As soon as the distance over which infinitival verbs moved changed in the history of French, the option of clitic climbing was lost. In Modern French only deficient clausal complements, which do not project all the way up to CP, allow clitic climbing.

Movement of full NPs into subject position is similar to clitic movement in the sense that neither of them can avail of the option of adjunction to a barrier, because of binding conditions and X-bar requirements, respectively. NP-movement can also be accounted for in terms of the mechanisms introduced for clitics: vacuous movement allows NPs to escape the complements of auxiliaries and the complements of verbs that trigger clitic climbing, which constitute or contain barriers, as expected under a unified approach. The mechanism of vacuous movement of a barrier can also account for the existence of endoclitics, elements that attach to the verb stem, internal to inflectional morphology; maintaining the general assumption that clitics attach to the highest functional head accessible in these cases, this atypical linear order can be explained in terms of the fact that T is opaque, so that the only way to break the structure open is to incorporate T into AGR and subsequently move the VP-barrier into the specifier of TP.

Under this analysis of the clitic phenomena no independent parameters need to be invoked for the syntax of clitics. All differences in the behavior of clitics across

languages that are discussed can be related to differences in syntactic properties of verbs. These can, in turn, be reduced to lexical properties of the functional heads that make up their extended projection: only [+opaque] functional heads disallow verb raising. Thus, modular interaction in conjunction with lexical specification of features of functional heads unifies a number of phenomena that are unrelated at first sight.

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Samenvatting

(Summary in Dutch)

Deze studie bevat een onderzoek naar de parameters die ten grondslag liggen aan cliticisatie-processen in Romaanse en Kru-talen. In navolging van recent werk van Kayne, wordt aangenomen dat cliticisatie een geval van hoofdverplaatsing is dat interacteert met andere hoofdverplaatsingsprocessen, in het bijzonder werkwoordverplaatsing, en dat clitics aan het hoogste toegankelijke functionele hoofd aanhecht. Aangezien clitics over andere hoofden heen verplaatst kunnen worden, vormt de Head Movement Constraint (HMC) een te sterke beperking op cliticisatie. Er kan echter worden aangetoond dat de antecedent-government-eis van het ECP de afstand waarover een clitic verplaatst kan worden in dit opzicht voldoende beperkt: zolang de clitic geen L-barrière overschrijdt, mag over tussenliggende hoofden heen verplaatst worden (zie echter de opmerkingen hieronder). De tussenliggende barrières worden op de gebruikelijke wijze door werkwoordverplaatsing geneutraliseerd. Deze derivatie van de s-structuur-configuratie voorspelt de juiste volgorde van clitics en inflectionele morfologie in de lineaire reeks: clitics nemen een externe positie in ten opzichte van de inflectionele morfologie. Deze analyse heeft interessante implicaties voor het proces van verwerving van cliticisatie.

Tijdens het verwervingsproces gaan kinderen die een Romaanse taal spreken van de tegenovergestelde aannames uit met betrekking tot de derivatie; op basis van positieve imperatieven herstructureren ze echter hun grammatica.

Aangezien clitic-verplaatsing door een subset van hoofden echter wel kan worden geblokkeerd, is een tweede beperking noodzakelijk. Wanneer het A/A-bar-onderscheid wordt uitgebreid over hoofden en hoofdverplaatsing, kan Relativized Minimality deze localiteitsfeiten verklaren: clitic-verplaatsing is een vorm van A-bar-verplaatsing (adjunctie) en verplaatsing kan dus slechts plaatsvinden over hoofden die geen minimaliteitsbarrière creëren, namelijk A-hoofden. Verplaatsing over andere clitics, complementeerders en finiete AGR, alle gevallen van A-bar-verplaatsing c.q. A-bar-hoofden, is uitgesloten. Onder de aanname dat een welgevormde keten alleen maar elementen mag bevatten met dezelfde categoriale en bar-eigenschappen, start de keten van een clitic in de Casus-positie van de maximale projectie waarvan de clitic het hoofd is; in termen van Relativized Minimality zal deze keten niet interfereren met A-bar-ketens die geassocieerd zijn met maximale projecties of met A-bar-specificeerders.

Verplaatsing van het werkwoord via successieve c-commanderende hoofden in zijn extended projection maakt de weg vrij voor de clitic. Dit scenario laat echter een groep feiten onverklaard: een clitic kan de uitgebreide projectie van het werkwoord dat hem selecteert verlaten; een clitic kan uit een complement van een hulpwerkwoord en uit een infinitief-complement van een werkwoord dat clitic climbing uitlokt verplaatst worden, hoewel in beide gevallen de AGRP die met het selecterende werkwoord is geassocieerd ook na werkwoordverplaatsing naar AGR een barrière opwerpt. Deze feiten kunnen echter worden verklaard in termen van vacueuze verplaatsing van de barrière in kwestie naar de specificeerder van een L-gemarkeerde categorie, waar de barrière geneutraliseerd kan worden via specificeerder-hoofd-congruentie. In gevallen van clitic climbing betekent dit dat AGRP naar de specificeerder van CP wordt verplaatst, waar de barrière

geneutraliseerd kan worden door het matrix-werkwoord, en in gevallen van hulpwerkwoorden dat AGRP naar de specificeerder van de met het hulpwerkwoord geassocieerde TP wordt verplaatst. Clitic climbing in Kru kan met dezelfde mechanismen worden verklaard, hoewel de details van de derivatie enigszins verschillen: de VP-barrière wordt naar de specificeerder van CP verplaatst. Kru heeft geen AGR-projectie en de TP-barrière wordt geneutraliseerd door de complementeerder.

Een interessante voorspelling van deze benadering is dat de syntactische eigenschappen van het werkwoord opnieuw nauw interacteren met cliticisatie: alleen wanneer het infinitivale werkwoord ver genoeg wordt verplaatst, naar AGR, wordt de clitic door ten hoogste één barrière (namelijk AGRP) van de matrix-AGR gescheiden. Als het werkwoord niet verder dan T wordt verplaatst, wordt de clitic echter door twee barrières (TP en AGRP) van de matrix-AGR gescheiden; in dat geval kan vacueuze verplaatsing hooguit één barrière neutraliseren en schendt clitic climbing het ECP. Dit is het verschil tussen het hedendaagse Frans, waar infinitivale werkwoorden niet verder dan T verplaatst worden, en het Italiaans en oudere fasen van het Frans, waar ze naar AGR verplaatst worden. Alleen in het laatste geval is clitic climbing toegestaan. In de ontwikkeling van het Frans ging afname van de afstand waarover het werkwoord werd verplaatst gepaard met verlies van clitic climbing. In het hedendaagse Frans is clitic climbing alleen toegestaan uit deficiënte complementen, welke niet tot het CP-niveau projecteren.

Verplaatsing van een NP naar subjectpositie lijkt op cliticisatie in deze zin dat geen van beide processen de mogelijkheid heeft aan barrières te ontsnappen via adjunctie; bindingscondities respectievelijk X-bar-theorie staan dat niet toe. NP-verplaatsing kan worden verklaard met dezelfde mechanismen die zijn ontwikkeld voor clitic-verplaatsing: vacueuze verplaatsing stelt NP's in staat uit complementen van hulpwerkwoorden en werkwoorden die clitic climbing uitlokken te ontsnappen, zoals verwacht onder een unificerende benadering. Het mechanisme van vacueuze verplaatsing kan ook een

unificerende benadering. Het mechanisme van vacueuze verplaatsing kan ook een verklaring bieden voor het bestaan van endoclitics, elementen die aan de werkwoordstam aanhechten, intern ten opzichte van inflectionele morfologie. Onder de algemene aanname dat clitics aan het hoogste functionele hoofd dat voor hen beschikbaar is aanhechten, kan deze atypische lineaire reeks worden verklaard door het feit dat T opaak is en dat de enige mogelijkheid om de structuur open te breken verplaatsing van T naar AGR is, zodat de VP-barrière vervolgens naar de specificeerder van TP verplaatst kan worden.

Deze analyse van clitic-verschijnselen noodzaakt geen onafhankelijke parameters voor de syntaxis van clitics. Alle verschillen in gedrag van clitics die besproken zijn kunnen worden gerelateerd aan syntactische eigenschappen van werkwoorden, welke op hun beurt weer terug te voeren zijn op lexicale eigenschappen van functionele hoofden: alleen hoofden met het kenmerk [+opaak] verbieden werkwoordincorporatie. Een aantal op het eerste gezicht ongerelateerde verschijnselen kan dus in termen van module-interactie en lexicale eigenschappen van functionele hoofden worden geünificeerd.